APENDICES

APENDICE I
Modelado Mes Enero

A. Resultados del AG1.

Tabla A.A.1.1: Resultados de granularidades para el problema estimacion de concentración Local Máxima de Ozono en Mexico durante mes Enero usando la función objetivo 1-Q (50 evaluaciones).

# Ejec.	Partición	Opt. Mask	Q	1-Q	RMS test (%)	MSE test (%)	#Trials	#Generac.	Mejor	Peor	Tiempo (seg)
1	(5 9 6 2 2 2)	(12,13,18)	0,6999	0,3001	0,0406	186,87	51	6	0,3001	0,4999	1728
2	(8 8 8 7 2 2)	(12,13,18)	0,6970	0,3030	0,0416	196,01	55	7	0,3030	0,4999	1569
3	(8 8 9 2 2 2)	(12,13,18)	0,6970	0,3030	0,0416	196,01	55	7	0,3030	0,4999	1329
4	(8 8 7 4 2 2)	(12,13,18)	0,6970	0,3030	0,0416	196,01	56	7	0,3030	0,4999	1383
5	**(9 3 3 3 2 2)**	**(1,12,18)**	**0,6886**	**0,3114**	**0,0416**	**195,89**	**54**	**7**	**0,3114**	**0,4999**	**1030**
6	**(8 8 4 3 2 2)**	**(12,13,18)**	**0,6970**	**0,3030**	**0,0416**	**196,01**	**54**	**7**	**0,3030**	**0,4999**	**919**
7	(5 5 6 3 2 2)	(12,13,18)	0,6999	0,3001	0,0406	186,87	57	7	0,3001	0,4999	1104
8	(9 5 3 3 2 2)	(1,12,18)	0,6886	0,3114	0,0416	195,89	57	7	0,3114	0,4999	1098
9	**(5 8 3 2 2 2)**	**(12,13,18)**	**0,6999**	**0,3001**	**0,0406**	**186,87**	**51**	**6**	**0,3001**	**0,4999**	**945**
10	(8 7 8 8 2 2)	(12,13,18)	0,6970	0,3030	0,0416	196,01	56	7	0,3030	0,4999	1511
11	**(6 6 6 3 2 2)**	**(7,12,18)**	**0,6855**	**0,3145**	**0,0360**	**147,07**	**54**	**7**	**0,3145**	**0,4999**	**1157**
12	(5 6 6 9 3 2)	(12,13,18)	0,6999	0,3001	0,0406	186,87	54	7	0,3001	0,5066	1652
13	(5 5 2 2 2 2)	(12,13,18)	0,6999	0,3001	0,0406	186,87	56	7	0,3001	0,4999	1145
14	(8 8 8 2 2 2)	(12,13,18)	0,6970	0,3030	0,0416	196,01	54	7	0,3030	0,4999	1234
15	(5 9 3 6 2 2)	(12,13,18)	0,6999	0,3001	0,0406	186,87	53	6	0,3001	0,4999	1710
16	(8 6 2 2 2 2)	(12,13,18)	0,6970	0,3030	0,0416	196,01	53	7	0,3030	0,4999	1165
17	(5 5 5 9 4 2)	(12,13,18)	0,6999	0,3001	0,0406	186,87	51	6	0,3001	0,4999	1696
18	(5 6 3 3 2 2)	(12,13,18)	0,6999	0,3001	0,0406	186,87	58	7	0,3001	0,4999	1147
19	(5 3 2 2 2 2)	(12,13,18)	0,6999	0,3001	0,0406	186,87	54	7	0,3001	0,4999	1087
20	(3 3 3 3 3 2)	(4,7,12,17,18)	0,6826	0,3174	0,0179	36,42	55	7	0,3174	0,4999	1302
21	(3 3 3 3 3 3)	(4,7,12,18)	0,6816	0,3184	0,0194	42,56	54	7	0,3184	0,4999	1824
22	(9 9 9 2 2 2)	(1,12,18)	0,6886	0,3114	0,0416	195,89	52	6	0,3114	0,4999	1219
23	**(3 9 3 3 3 2)**	**(4,7,12,17,18)**	**0,6826**	**0,3174**	**0,0179**	**36,42**	**52**	**6**	**0,3174**	**0,4999**	**1284**
24	(8 9 5 6 2 2)	(12,13,18)	0,6970	0,3030	0,0416	196,01	53	7	0,3030	0,5026	1430
25	(9 9 9 9 2 2)	(1,12,18)	0,6886	0,3114	0,0416	195,89	52	6	0,3114	0,4999	1306
26	(5 5 5 9 2 2)	(12,13,18)	0,6999	0,3001	0,0406	186,87	51	6	0,3001	0,4999	1259
27	(9 6 6 6 2 2)	(1,12,18)	0,6886	0,3114	0,0416	195,89	57	7	0,3114	0,4999	1090
28	**(3 3 3 3 3 3)**	**(4,7,12,18)**	**0,6816**	**0,3184**	**0,0194**	**42,56**	**53**	**6**	**0,3184**	**0,4999**	**1260**
29	(3 3 3 3 3 3)	(4,7,12,18)	0,6816	0,3184	0,0194	42,56	53	7	0,3184	0,4999	1355
30	(5 5 2 2 2 2)	(12,13,18)	0,6999	0,3001	0,0406	186,87	54	6	0,3001	0,4999	1352

Tabla A.A.2.2: Resultados de granularidades para el problema estimacion de concentración Local Máxima de Ozono en Mexico durante mes Enero usando el error de predicción del último 25% de datos del conjunto de datos de entrenamiento como función objetivo (FCMSEtrain) (100 evaluaciones).

# Ejec.	Partición	Opt. Mask	Q	FCMSEtrain(%)	FCRMStrain(%)	RMStest (%)	MSEtest (%)	#Trials	#Generac.	Mejor	Peor	Tiempo (seg)
1	**(3 4 3 9 2 2)**	**(7,12,16,18)**	**0,6695**	**56,73**	**0,0203**	**0,0184**	**38,33**	**101**	**13**	**56,73**	**213,76**	**1657**
2	(2 2 5 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	101	13	49,12	205,15	1374
3	(2 2 6 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	103	14	49,12	266,31	1434
4	(2 2 5 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	106	14	49,12	205,15	1345
5	(2 2 3 4 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	101	13	52,85	205,15	1534
6	(2 2 9 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	101	13	49,12	309,25	1167
7	**(2 2 5 6 2 2)**	**(1,12,14,16,18)**	**0,5723**	**55,11**	**0,0201**	**0,0295**	**98,87**	**102**	**14**	**55,11**	**220,83**	**1481**
8	**(2 2 6 2 2 2)**	**(1,12,14,17,18)**	**0,5687**	**49,12**	**0,0189**	**0,0221**	**55,56**	**102**	**13**	**49,12**	**234,06**	**1122**
9	(2 2 4 5 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	107	14	52,85	205,15	1164
10	(2 2 3 2 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	103	13	52,85	205,15	1296
11	(2 2 2 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	101	13	52,85	244,26	1198
12	(2 2 4 4 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	107	14	52,85	216,76	1346
13	(2 2 6 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	105	14	49,12	220,83	1317
14	(2 2 5 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	105	14	49,12	266,31	1820
15	**(2 2 3 2 3 2)**	**(1,11,12,14,18)**	**0,5794**	**57,87**	**0,0206**	**0,0235**	**62,60**	**102**	**13**	**49,12**	**254,31**	**1825**
16	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	101	14	49,12	219,07	1137
17	**(2 2 2 9 2 2)**	**(1,12,14,15,18)**	**0,5885**	**62,67**	**0,0214**	**0,0211**	**50,45**	**101**	**13**	**62,67**	**246,42**	**1447**
18	(2 2 8 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	103	14	49,12	205,15	1265
19	(2 2 6 7 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	105	14	52,85	212,23	1150
20	(2 2 2 4 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	105	14	52,85	216,76	1264
21	(2 2 2 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	103	14	52,85	205,15	1192
22	(2 2 5 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	104	14	49,12	213,76	1065
23	(2 2 7 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	108	15	52,85	205,15	2036
24	**(2 2 7 7 4 4)**	**(1,12,17,18)**	**0,5587**	**57,91**	**0,0205**	**0,0193**	**42,16**	**103**	**13**	**57,91**	**266,31**	**1532**
25	(2 2 5 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	108	14	49,12	205,15	1220
26	(2 2 6 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	102	13	49,12	216,76	1148
27	**(2 2 2 2 3 3)**	**(1,12,14,17,18)**	**0,6275**	**52,85**	**0,0196**	**0,0244**	**67,57**	**101**	**13**	**52,85**	**205,15**	**1131**
28	(2 2 9 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	105	14	49,12	220,83	1296
29	**(3 8 8 8 2 2)**	**(7,12,16,18)**	**0,6683**	**60,89**	**0,0210**	**0,0180**	**36,71**	**102**	**14**	**60,89**	**241,43**	**1697**
30	(2 2 8 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	105	14	52,85	234,06	1302

Tabla A.A.2.3: Resultados de granularidades para el problema estimacion de concentración Local Máxima de Ozono en Mexico durante mes Enero usando el error de predicción del último 25% de datos del conjunto de datos de entrenamiento como función objetivo (FCMSEtrain) (200 evaluaciones).

# Ejec.	Partición	Opt. Mask	Q	FCMSEtrain(%)	FCRMStrain(%)	RMStest (%)	MSEtest (%)	#Trials	#Generac.	Mejor	Peor	Tiempo (seg)
1	(2 2 8 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	202	28	49,12	264,13	2181
2	(2 2 7 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	207	29	49,12	220,83	2006
3	(2 2 7 7 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	206	28	52,85	205,15	2236
4	**(2 3 3 4 4 4)**	**(1,12,17,18)**	**0,5587**	**57,91**	**0,0205**	**0,0193**	**42,16**	**209**	**29**	**57,91**	**266,31**	**2618**
5	(2 2 5 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	203	29	49,12	220,83	1621
6	(2 2 5 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	208	28	49,12	264,13	1826
7	(2 2 6 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	206	29	49,12	213,76	1751
8	(2 2 3 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	201	26	52,85	220,83	1863
9	(2 2 3 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	205	28	52,85	244,26	2001
10	(2 2 6 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	204	29	49,12	234,06	1587
11	(2 2 5 4 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	207	29	52,85	234,06	2237
12	(2 2 7 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	201	28	49,12	205,15	1581
13	(2 2 2 4 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	202	28	52,85	205,15	1879
14	**(2 2 5 7 4 2)**	**(1,12,14,17,18)**	**0,5812**	**47,94**	**0,0187**	**0,0229**	**59,39**	**203**	**28**	**47,94**	**234,06**	**1829**
15	(2 2 2 9 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	208	29	52,85	205,15	1864
16	(2 2 4 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	201	29	52,85	234,06	1657
17	(2 2 7 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	201	29	52,85	205,15	1648
18	**(2 2 3 2 3 3)**	**(1,12,14,17,18)**	**0,6275**	**52,85**	**0,0196**	**0,0244**	**67,57**	**203**	**27**	**52,85**	**216,76**	**1480**
19	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	202	28	49,12	205,15	2541
20	**(2 2 7 2 2 2)**	**(1,12,14,17,18)**	**0,5687**	**49,12**	**0,0189**	**0,0221**	**55,56**	**205**	**29**	**49,12**	**205,15**	**1371**
21	(2 2 8 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	205	28	49,12	218,68	1985
22	(2 2 7 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	204	29	49,12	246,42	1699
23	(2 2 7 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	204	29	49,12	205,15	1629
24	**(3 4 2 4 6 4)**	**(4,7,12,18)**	**0,5729**	**58,49**	**0,0206**	**0,0215**	**52,48**	**202**	**28**	**58,49**	**266,31**	**2163**
25	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	205	29	49,12	266,31	2144
26	(2 2 6 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	206	29	49,12	205,15	1560
27	(2 2 3 7 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	206	28	47,94	205,15	1966
28	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	205	28	49,12	205,15	1954
29	(2 2 9 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	206	29	49,12	216,76	1937
30	(2 2 7 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	202	29	49,12	219,07	1818

Tabla A.A.2.4: Resultados de granularidades para el problema estimacion de concentración Local Máxima de Ozono en Mexico durante mes Enero usando el error de predicción del último 25% de datos del conjunto de datos de entrenamiento como función objetivo (FCMSEtrain) (400 evaluaciones).

# Ejec.	Partición	Opt. Mask	Q	FCMSEtrain(%)	FCRMStrain(%)	RMStest (%)	MSEtest (%)	#Trials	#Generac.	Mejor	Peor	Tiempo (seg)
1	(2 2 6 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	401	57	49,12	205,15	2617
2	(2 2 7 2 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	403	58	47,94	266,31	3162
3	(2 5 6 4 4 4)	(1,12,17,18)	0,5587	57,91	0,0205	0,0193	42,16	406	57	57,91	234,06	3543
4	(2 2 4 2 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	404	57	47,94	211,95	2421
5	(2 2 6 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	406	59	49,12	213,76	3066
6	(2 2 8 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	403	57	49,12	234,06	2538
7	(2 2 6 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	401	57	49,12	205,15	2783
8	(2 2 2 2 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	403	57	52,85	234,06	2327
9	(2 2 8 3 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	404	59	47,94	209,70	2655
10	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	402	57	49,12	234,06	3035
11	(2 2 7 6 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	409	59	52,85	205,15	3213
12	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	402	57	49,12	264,13	3536
13	(2 2 3 3 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	401	56	47,94	266,31	2859
14	**(2 9 3 4 4 4)**	**(1,12,17,18)**	**0,5587**	**57,91**	**0,0205**	**0,0193**	**42,16**	**405**	**57**	**57,91**	**205,15**	**3303**
15	(2 2 8 4 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	404	56	47,94	205,15	2888
16	(2 2 2 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	405	58	52,85	266,31	2434
17	(2 2 8 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	405	59	49,12	205,15	3035
18	(2 2 3 2 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	403	59	47,94	266,31	2483
19	(2 2 2 2 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	407	57	52,85	211,95	2363
20	**(2 2 3 2 3 3)**	**(1,12,14,17,18)**	**0,6275**	**52,85**	**0,0196**	**0,0244**	**67,57**	**404**	**59**	**52,85**	**205,15**	**2230**
21	(2 2 3 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	401	58	52,85	244,26	2677
22	(2 2 5 4 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	402	58	47,94	205,15	2399
23	**(2 2 8 3 2 2)**	**(1,12,14,17,18)**	**0,5687**	**49,12**	**0,0189**	**0,0221**	**55,56**	**407**	**57**	**49,12**	**205,15**	**2450**
24	(2 2 8 5 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	401	56	47,94	234,06	2661
25	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	401	59	49,12	205,15	2705
26	(2 2 9 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	406	57	49,12	216,76	2915
27	**(2 2 5 3 4 2)**	**(1,12,14,17,18)**	**0,5812**	**47,94**	**0,0187**	**0,0229**	**59,39**	**407**	**59**	**47,94**	**205,15**	**2316**
28	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	406	59	49,12	234,06	3852
29	(2 2 2 6 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	408	58	52,85	254,31	2784
30	(2 2 8 2 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	404	57	47,94	205,15	2614

Tabla A.A.2.5: Resultados de granularidades para el problema estimacion de concentración Local Máxima de Ozono en Mexico durante mes Enero usando el error de predicción del último 25% de datos del conjunto de datos de entrenamiento como función objetivo (FCMSEtrain) (800 evaluaciones).

# Ejec.	Partición	Opt. Mask	Q	FCMSEtrain(%)	FCRMStrain(%)	RMStest (%)	MSEtest (%)	#Trials	#Generac.	Mejor	Peor	Tiempo (seg)
1	(2 5 2 4 4 4)	(1,12,17,18)	0,5587	57,91	0,0205	0,0193	42,16	803	116	57,91	216,76	7003
2	(2 6 4 7 4 4)	(1,12,17,18)	0,5587	57,91	0,0205	0,0193	42,16	804	116	57,91	205,15	7779
3	(2 2 7 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	810	116	49,12	220,83	4687
4	**(2 2 2 3 3 3)**	**(1,12,14,17,18)**	**0,6275**	**52,85**	**0,0196**	**0,0244**	**67,57**	**801**	**115**	**52,85**	**205,15**	**3824**
5	(2 2 6 5 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	807	117	52,85	216,76	4782
6	(2 2 3 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	801	116	52,85	266,31	5840
7	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	802	116	49,12	216,76	4603
8	(2 2 8 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	801	117	49,12	205,15	4182
9	(2 2 4 2 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	805	114	52,85	216,76	4190
10	**(2 7 4 4 4 4)**	**(1,12,17,18)**	**0,5587**	**57,91**	**0,0205**	**0,0193**	**42,16**	**803**	**113**	**57,91**	**264,13**	**7535**
11	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	806	117	49,12	205,15	4465
12	(2 6 6 7 4 4)	(1,12,17,18)	0,5587	57,91	0,0205	0,0193	42,16	806	118	57,91	213,76	10265
13	(2 2 5 7 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	804	116	47,94	216,76	5511
14	**(2 2 5 3 2 2)**	**(1,12,14,17,18)**	**0,5687**	**49,12**	**0,0189**	**0,0221**	**55,56**	**802**	**114**	**49,12**	**246,42**	**3799**
15	(2 2 3 4 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	806	117	52,85	234,06	4690
16	(2 2 6 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	804	117	49,12	205,15	4989
17	(2 2 8 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	805	115	49,12	205,15	4944
18	**(3 3 6 9 3 2)**	**(7,12,16,18)**	**0,6695**	**56,73**	**0,0203**	**0,0184**	**38,33**	**804**	**115**	**56,73**	**205,15**	**7046**
19	(2 2 2 8 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	802	115	47,94	205,15	5046
20	**(2 2 3 2 4 2)**	**(1,12,14,17,18)**	**0,5812**	**47,94**	**0,0187**	**0,0229**	**59,39**	**803**	**113**	**47,94**	**216,76**	**4053**
21	(2 2 8 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	805	118	49,12	237,52	4605
22	(2 2 4 7 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	804	116	52,85	209,70	4708
23	(2 2 3 4 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	806	116	47,94	205,15	5956
24	(2 2 5 4 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	805	116	52,85	264,13	6351
25	(2 2 4 8 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	810	114	47,94	205,15	4892
26	(2 2 3 3 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	804	115	47,94	211,95	4627
27	(2 2 3 8 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	802	116	52,85	205,15	4928
28	(2 2 4 5 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	802	117	52,85	220,83	4835
29	(2 2 3 2 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	804	115	52,85	205,15	4204
30	(2 2 3 6 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	804	119	52,85	264,13	5785

Tabla A.A.2.1: Resultados de granularidades para el problema estimacion de concentración Local Máxima de Ozono en Mexico durante mes Enero usando el error de predicción del último 25% de datos del conjunto de datos de entrenamiento como función objetivo (FCMSEtrain) (50 evaluaciones).

# Ejec.	Partición	Opt. Mask	Q	FCMSEtrain(%)	FCRMStrain(%)	RMS test (%)	MSE test (%)	#Trials	#Generac.	Mejor	Peor	Tiempo (seg)
1	(2 2 2 2 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	52	7	52,85	234,06	1003
2	(2 2 7 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	54	7	49,12	234,06	974
3	**(2 2 2 2 2 2)**	**(1,12,14,15,18)**	**0,5885**	**62,67**	**0,0214**	**0,0211**	**50,45**	**55**	**7**	**52,85**	**205,15**	**918**
4	(2 2 9 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	54	7	49,12	205,15	967
5	**(2 2 8 2 2 2)**	**(1,12,14,17,18)**	**0,5687**	**49,12**	**0,0189**	**0,0221**	**55,56**	**54**	**7**	**49,12**	**205,15**	**728**
6	(2 2 3 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	53	7	52,85	234,06	753
7	(2 3 8 8 4 4)	(1,12,17,18)	0,5587	57,91	0,0205	0,0193	42,16	53	6	57,91	205,15	1076
8	**(2 2 2 2 3 3)**	**(1,12,14,17,18)**	**0,6275**	**52,85**	**0,0196**	**0,0244**	**67,57**	**57**	**7**	**52,85**	**205,15**	**708**
9	**(3 6 6 9 3 2)**	**(7,12,16,18)**	**0,6695**	**56,73**	**0,0203**	**0,0184**	**38,33**	**51**	**6**	**56,73**	**205,15**	**1288**
10	(2 2 2 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	56	7	52,85	205,15	823
11	(2 2 3 8 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	56	7	52,85	246,42	920
12	(2 4 2 4 4 4)	(1,12,17,18)	0,5587	57,91	0,0205	0,0193	42,16	54	7	57,91	234,06	818
13	(2 2 2 2 3 2)	(1,12,14,15,18)	0,5885	62,67	0,0214	0,0211	50,45	52	6	62,67	216,76	995
14	**(2 2 2 3 2 3)**	**(1,11,12,14,18)**	**0,6243**	**56,96**	**0,0204**	**0,0260**	**76,84**	**56**	**7**	**56,96**	**266,31**	**764**
15	(2 2 7 7 4 4)	(1,12,17,18)	0,5587	57,91	0,0205	0,0193	42,16	55	7	57,91	205,15	1050
16	(2 2 8 4 4 4)	(1,12,17,18)	0,5587	57,91	0,0205	0,0193	42,16	53	6	57,91	266,31	1226
17	(2 2 2 2 2 2)	(1,12,14,15,18)	0,5885	62,67	0,0214	0,0211	50,45	54	6	57,91	213,76	1107
18	(2 2 2 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	55	7	52,85	205,15	1008
19	(2 2 3 4 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	56	7	52,85	205,15	771
20	(2 2 4 2 2 3)	(1,11,12,14,18)	0,6243	56,96	0,0204	0,0260	76,84	57	7	56,96	205,15	1032
21	(3 4 3 9 2 2)	(7,12,16,18)	0,6695	56,73	0,0203	0,0184	38,33	52	6	56,73	216,76	866
22	**(2 8 8 4 4 4)**	**(1,12,17,18)**	**0,5587**	**57,91**	**0,0205**	**0,0193**	**42,16**	**56**	**7**	**57,91**	**205,15**	**830**
23	(2 7 7 6 4 4)	(1,12,17,18)	0,5587	57,91	0,0205	0,0193	42,16	54	7	57,91	234,06	933
24	(2 2 6 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	51	6	49,12	234,06	931
25	(2 2 7 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	58	7	49,12	205,15	916
26	(2 2 7 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	51	6	52,85	205,15	1105
27	(2 2 8 8 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	55	7	52,85	220,83	809
28	(2 2 2 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	56	7	49,12	205,15	832
29	**(3 8 8 8 2 2)**	**(7,12,16,18)**	**0,6683**	**60,89**	**0,0210**	**0,0180**	**36,71**	**51**	**6**	**60,89**	**241,43**	**1007**
30	(2 2 2 2 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	56	7	52,85	213,76	1257

Tabla A.A.2.2: Resultados de granularidades para el problema estimacion de concentración Local Máxima de Ozono en Mexico durante mes Enero usando el error de predicción del último 25% de datos del conjunto de datos de entrenamiento como función objetivo (FCMSEtrain) (100 evaluaciones).

# Ejec.	Partición	Opt. Mask	Q	FCMSEtrain(%)	FCRMStrain(%)	RMStest (%)	MSEtest (%)	#Trials	#Generac.	Mejor	Peor	Tiempo (seg)
1	**(3 4 3 9 2 2)**	**(7,12,16,18)**	**0,6695**	**56,73**	**0,0203**	**0,0184**	**38,33**	**101**	**13**	**56,73**	**213,76**	**1657**
2	(2 2 5 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	101	13	49,12	205,15	1374
3	(2 2 6 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	103	14	49,12	266,31	1434
4	(2 2 5 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	106	14	49,12	205,15	1345
5	(2 2 3 4 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	101	13	52,85	205,15	1534
6	(2 2 9 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	101	13	49,12	309,25	1167
7	**(2 2 5 6 2 2)**	**(1,12,14,16,18)**	**0,5723**	**55,11**	**0,0201**	**0,0295**	**98,87**	**102**	**14**	**55,11**	**220,83**	**1481**
8	**(2 2 6 2 2 2)**	**(1,12,14,17,18)**	**0,5687**	**49,12**	**0,0189**	**0,0221**	**55,56**	**102**	**13**	**49,12**	**234,06**	**1122**
9	(2 2 4 5 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	107	14	52,85	205,15	1164
10	(2 2 3 2 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	103	13	52,85	205,15	1296
11	(2 2 2 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	101	13	52,85	244,26	1198
12	(2 2 4 4 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	107	14	52,85	216,76	1346
13	(2 2 6 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	105	14	49,12	220,83	1317
14	(2 2 5 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	105	14	49,12	266,31	1820
15	**(2 2 3 2 3 2)**	**(1,11,12,14,18)**	**0,5794**	**57,87**	**0,0206**	**0,0235**	**62,60**	**102**	**13**	**49,12**	**254,31**	**1825**
16	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	101	14	49,12	219,07	1137
17	**(2 2 2 9 2 2)**	**(1,12,14,15,18)**	**0,5885**	**62,67**	**0,0214**	**0,0211**	**50,45**	**101**	**13**	**62,67**	**246,42**	**1447**
18	(2 2 8 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	103	14	49,12	205,15	1265
19	(2 2 6 7 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	105	14	52,85	212,23	1150
20	(2 2 2 4 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	105	14	52,85	216,76	1264
21	(2 2 2 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	103	14	52,85	205,15	1192
22	(2 2 5 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	104	14	49,12	213,76	1065
23	(2 2 7 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	108	15	52,85	205,15	2036
24	**(2 2 7 7 4 4)**	**(1,12,17,18)**	**0,5587**	**57,91**	**0,0205**	**0,0193**	**42,16**	**103**	**13**	**57,91**	**266,31**	**1532**
25	(2 2 5 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	108	14	49,12	205,15	1220
26	(2 2 6 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	102	13	49,12	216,76	1148
27	**(2 2 2 2 3 3)**	**(1,12,14,17,18)**	**0,6275**	**52,85**	**0,0196**	**0,0244**	**67,57**	**101**	**13**	**52,85**	**205,15**	**1131**
28	(2 2 9 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	105	14	49,12	220,83	1296
29	**(3 8 8 8 2 2)**	**(7,12,16,18)**	**0,6683**	**60,89**	**0,0210**	**0,0180**	**36,71**	**102**	**14**	**60,89**	**241,43**	**1697**
30	(2 2 8 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	105	14	52,85	234,06	1302

Tabla A.A.2.3: Resultados de granularidades para el problema estimacion de concentración Local Máxima de Ozono en Mexico durante mes Enero usando el error de predicción del último 25% de datos del conjunto de datos de entrenamiento como función objetivo (FCMSEtrain) (200 evaluaciones).

# Ejec.	Partición	Opt. Mask	Q	FCMSEtrain(%)	FCRMStrain(%)	RMStest (%)	MSEtest (%)	#Trials	#Generac.	Mejor	Peor	Tiempo (seg)
1	(2 2 8 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	202	28	49,12	264,13	2181
2	(2 2 7 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	207	29	49,12	220,83	2006
3	(2 2 7 7 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	206	28	52,85	205,15	2236
4	**(2 3 3 4 4 4)**	**(1,12,17,18)**	**0,5587**	**57,91**	**0,0205**	**0,0193**	**42,16**	**209**	**29**	**57,91**	**266,31**	**2618**
5	(2 2 5 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	203	29	49,12	220,83	1621
6	(2 2 5 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	208	28	49,12	264,13	1826
7	(2 2 6 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	206	29	49,12	213,76	1751
8	(2 2 3 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	201	26	52,85	220,83	1863
9	(2 2 3 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	205	28	52,85	244,26	2001
10	(2 2 6 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	204	29	49,12	234,06	1587
11	(2 2 5 4 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	207	29	52,85	234,06	2237
12	(2 2 7 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	201	28	49,12	205,15	1581
13	(2 2 2 4 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	202	28	52,85	205,15	1879
14	**(2 2 5 7 4 2)**	**(1,12,14,17,18)**	**0,5812**	**47,94**	**0,0187**	**0,0229**	**59,39**	**203**	**28**	**47,94**	**234,06**	**1829**
15	(2 2 2 9 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	208	29	52,85	205,15	1864
16	(2 2 4 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	201	29	52,85	234,06	1657
17	(2 2 7 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	201	29	52,85	205,15	1648
18	**(2 2 3 2 3 3)**	**(1,12,14,17,18)**	**0,6275**	**52,85**	**0,0196**	**0,0244**	**67,57**	**203**	**27**	**52,85**	**216,76**	**1480**
19	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	202	28	49,12	205,15	2541
20	**(2 2 7 2 2 2)**	**(1,12,14,17,18)**	**0,5687**	**49,12**	**0,0189**	**0,0221**	**55,56**	**205**	**29**	**49,12**	**205,15**	**1371**
21	(2 2 8 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	205	28	49,12	218,68	1985
22	(2 2 7 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	204	29	49,12	246,42	1699
23	(2 2 7 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	204	29	49,12	205,15	1629
24	**(3 4 2 4 6 4)**	**(4,7,12,18)**	**0,5729**	**58,49**	**0,0206**	**0,0215**	**52,48**	**202**	**28**	**58,49**	**266,31**	**2163**
25	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	205	29	49,12	266,31	2144
26	(2 2 6 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	206	29	49,12	205,15	1560
27	(2 2 3 7 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	206	28	47,94	205,15	1966
28	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	205	28	49,12	205,15	1954
29	(2 2 9 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	206	29	49,12	216,76	1937
30	(2 2 7 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	202	29	49,12	219,07	1818

Tabla A.A.2.4: Resultados de granularidades para el problema estimacion de concentración Local Máxima de Ozono en Mexico durante mes Enero usando el error de predicción del último 25% de datos del conjunto de datos de entrenamiento como función objetivo (FCMSEtrain) (400 evaluaciones).

# Ejec.	Partición	Opt. Mask	Q	FCMSEtrain(%)	FCRMStrain(%)	RMStest (%)	MSEtest (%)	#Trials	#Generac.	Mejor	Peor	Tiempo (seg)
1	(2 2 6 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	401	57	49,12	205,15	2617
2	(2 2 7 2 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	403	58	47,94	266,31	3162
3	(2 5 6 4 4 4)	(1,12,17,18)	0,5587	57,91	0,0205	0,0193	42,16	406	57	57,91	234,06	3543
4	(2 2 4 2 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	404	57	47,94	211,95	2421
5	(2 2 6 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	406	59	49,12	213,76	3066
6	(2 2 8 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	403	57	49,12	234,06	2538
7	(2 2 6 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	401	57	49,12	205,15	2783
8	(2 2 2 2 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	403	57	52,85	234,06	2327
9	(2 2 8 3 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	404	59	47,94	209,70	2655
10	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	402	57	49,12	234,06	3035
11	(2 2 7 6 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	409	59	52,85	205,15	3213
12	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	402	57	49,12	264,13	3536
13	(2 2 3 3 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	401	56	47,94	266,31	2859
14	**(2 9 3 4 4 4)**	**(1,12,17,18)**	**0,5587**	**57,91**	**0,0205**	**0,0193**	**42,16**	**405**	**57**	**57,91**	**205,15**	**3303**
15	(2 2 8 4 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	404	56	47,94	205,15	2888
16	(2 2 2 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	405	58	52,85	266,31	2434
17	(2 2 8 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	405	59	49,12	205,15	3035
18	(2 2 3 2 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	403	59	47,94	266,31	2483
19	(2 2 2 2 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	407	57	52,85	211,95	2363
20	**(2 2 3 2 3 3)**	**(1,12,14,17,18)**	**0,6275**	**52,85**	**0,0196**	**0,0244**	**67,57**	**404**	**59**	**52,85**	**205,15**	**2230**
21	(2 2 3 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	401	58	52,85	244,26	2677
22	(2 2 5 4 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	402	58	47,94	205,15	2399
23	**(2 2 8 3 2 2)**	**(1,12,14,17,18)**	**0,5687**	**49,12**	**0,0189**	**0,0221**	**55,56**	**407**	**57**	**49,12**	**205,15**	**2450**
24	(2 2 8 5 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	401	56	47,94	234,06	2661
25	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	401	59	49,12	205,15	2705
26	(2 2 9 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	406	57	49,12	216,76	2915
27	**(2 2 5 3 4 2)**	**(1,12,14,17,18)**	**0,5812**	**47,94**	**0,0187**	**0,0229**	**59,39**	**407**	**59**	**47,94**	**205,15**	**2316**
28	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	406	59	49,12	234,06	3852
29	(2 2 2 6 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	408	58	52,85	254,31	2784
30	(2 2 8 2 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	404	57	47,94	205,15	2614

Tabla A.A.2.5: Resultados de granularidades para el problema estimacion de concentración Local Máxima de Ozono en Mexico durante mes Enero usando el error de predicción del último 25% de datos del conjunto de datos de entrenamiento como función objetivo (FCMSEtrain) (800 evaluaciones).

# Ejec.	Partición	Opt. Mask	Q	FCMSEtrain(%)	FCRMStrain(%)	RMStest (%)	MSEtest (%)	#Trials	#Generac.	Mejor	Peor	Tiempo (seg)
1	(2 5 2 4 4 4)	(1,12,17,18)	0,5587	57,91	0,0205	0,0193	42,16	803	116	57,91	216,76	7003
2	(2 6 4 7 4 4)	(1,12,17,18)	0,5587	57,91	0,0205	0,0193	42,16	804	116	57,91	205,15	7779
3	(2 2 7 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	810	116	49,12	220,83	4687
4	**(2 2 2 3 3 3)**	**(1,12,14,17,18)**	**0,6275**	**52,85**	**0,0196**	**0,0244**	**67,57**	**801**	**115**	**52,85**	**205,15**	**3824**
5	(2 2 6 5 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	807	117	52,85	216,76	4782
6	(2 2 3 3 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	801	116	52,85	266,31	5840
7	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	802	116	49,12	216,76	4603
8	(2 2 8 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	801	117	49,12	205,15	4182
9	(2 2 4 2 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	805	114	52,85	216,76	4190
10	**(2 7 4 4 4 4)**	**(1,12,17,18)**	**0,5587**	**57,91**	**0,0205**	**0,0193**	**42,16**	**803**	**113**	**57,91**	**264,13**	**7535**
11	(2 2 7 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	806	117	49,12	205,15	4465
12	(2 6 6 7 4 4)	(1,12,17,18)	0,5587	57,91	0,0205	0,0193	42,16	806	118	57,91	213,76	10265
13	(2 2 5 7 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	804	116	47,94	216,76	5511
14	**(2 2 5 3 2 2)**	**(1,12,14,17,18)**	**0,5687**	**49,12**	**0,0189**	**0,0221**	**55,56**	**802**	**114**	**49,12**	**246,42**	**3799**
15	(2 2 3 4 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	806	117	52,85	234,06	4690
16	(2 2 6 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	804	117	49,12	205,15	4989
17	(2 2 8 3 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	805	115	49,12	205,15	4944
18	**(3 3 6 9 3 2)**	**(7,12,16,18)**	**0,6695**	**56,73**	**0,0203**	**0,0184**	**38,33**	**804**	**115**	**56,73**	**205,15**	**7046**
19	(2 2 2 8 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	802	115	47,94	205,15	5046
20	**(2 2 3 2 4 2)**	**(1,12,14,17,18)**	**0,5812**	**47,94**	**0,0187**	**0,0229**	**59,39**	**803**	**113**	**47,94**	**216,76**	**4053**
21	(2 2 8 2 2 2)	(1,12,14,17,18)	0,5687	49,12	0,0189	0,0221	55,56	805	118	49,12	237,52	4605
22	(2 2 4 7 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	804	116	52,85	209,70	4708
23	(2 2 3 4 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	806	116	47,94	205,15	5956
24	(2 2 5 4 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	805	116	52,85	264,13	6351
25	(2 2 4 8 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	810	114	47,94	205,15	4892
26	(2 2 3 3 4 2)	(1,12,14,17,18)	0,5812	47,94	0,0187	0,0229	59,39	804	115	47,94	211,95	4627
27	(2 2 3 8 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	802	116	52,85	205,15	4928
28	(2 2 4 5 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	802	117	52,85	220,83	4835
29	(2 2 3 2 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	804	115	52,85	205,15	4204
30	(2 2 3 6 3 3)	(1,12,14,17,18)	0,6275	52,85	0,0196	0,0244	67,57	804	119	52,85	264,13	5785

B. Resultados del AG2 usando la granularidad suministrada por AG1.

Tabla A.B.1.2: Resultados de proporciones de datos (distribución de landmarks) para granularidad (3,2,2,3,3,2). Concentración Local Máxima de Ozono en Mexico usando la función de costo 1-Q (1000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	1-Q	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(0.42,0.36,0.22) (0.38,0.62) (0.48,0.52) (0.14,0.47,0.39) (0.6,0.24,0.16) (0.68,0.32)	(12,13,17,18)	0,8623	0,1377	0,0202	46,0471	28	1011	0,1377	0,4187	5930
2	(0.12,0.23,0.65) (0.44,0.56) (0.52,0.48) (0.37,0.26,0.37) (0.28,0.26,0.46) (0.09,0.91)	(5,14,16,17,18)	0,9767	0,0233	0,0292	96,2349	28	1032	0,0233	0,4151	6151
3	(0.47,0.29,0.24) (0.49,0.51) (0.35,0.65) (0.37,0.37,0.26) (0.31,0.31,0.38) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	28	1026	0,1382	0,4203	6067
4	(0.37,0.33, 0.3) (0.48,0.52) (0.54,0.46) (0.35,0.31,0.34) (0.29,0.36,0.35) (0.71,0.29)	(1,12,18)	0,8518	0,1482	0,0306	106,3879	27	1005	0,1482	0,4254	5946
5	(0.26,0.26,0.48) (0.69,0.31) (0.6, 0.4) (0.37,0.26,0.37) (0.42, 0.4,0.18) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	28	1010	0,1382	0,4078	5904
6	(0.39,0.32,0.29) (0.39,0.61) (0.34,0.66) (0.31,0.39, 0.3) (0.27,0.54,0.19) (0.69,0.31)	(7,12,16,18)	0,8543	0,1457	0,0185	38,7402	28	1014	0,1457	0,4191	5993
7	(0.38,0.36,0.26) (0.66,0.34) (0.74,0.26) (0.58,0.12, 0.3) (0.25, 0.5,0.25) (0.69,0.31)	(7,10,12,18)	0,8570	0,1430	0,0195	43,1227	27	1002	0,1430	0,4102	5819
8	(0.34,0.36, 0.3) (0.8, 0.2) (0.41,0.59) (0.35,0.36,0.29) (0.3,0.38,0.32) (0.09,0.91)	(14,16,17,18)	0,9788	0,0212	0,0306	105,7506	28	1010	0,0212	0,4173	5912
9	(0.38,0.35,0.27) (0.61,0.39) (0.58,0.42) (0.33,0.31,0.36) (0.4,0.27,0.33) (0.7, 0.3)	(7,12,18)	0,8503	0,1497	0,0178	35,9318	29	1027	0,1497	0,4220	6084
10	(0.34,0.36, 0.3) (0.48,0.52) (0.52,0.48) (0.39,0.31, 0.3) (0.36,0.35,0.29) (0.7, 0.3)	(1,12,18)	0,8501	0,1499	0,0176	35,0243	28	1029	0,1499	0,4152	6076

11	(0.34,0.32,0.34) (0.44,0.56) (0.5, 0.5) (0.27, 0.5,0.23) (0.44, 0.4,0.16) (0.09,0.91)	(5,14,15,16,18)	0,9733	0,0267	0,022	54,9129	28	1020	0,0267	0,4175	6002
12	(0.35,0.44,0.21) (0.6, 0.4) (0.43,0.57) (0.35,0.34,0.31) (0.28, 0.3,0.42) (0.07,0.93)	(5,14,16,17,18)	0,9801	0,0199	0,0285	91,9322	28	1025	0,0199	0,4262	6077
13	(0.37,0.32,0.31) (0.45,0.55) (0.54,0.46) (0.26,0.31,0.43) (0.3,0.43,0.27) (0.7, 0.3)	(1,12,18)	0,8501	0,1499	0,0176	35,0243	28	1034	0,1499	0,4050	6138
14	(0.34,0.35,0.31) (0.64,0.36) (0.53,0.47) (0.23,0.46,0.31) (0.33,0.38,0.29) (0.71,0.29)	(1,12,18)	0,8518	0,1482	0,0306	106,3879	28	1024	0,1482	0,4167	5999
15	(0.38,0.32, 0.3) (0.32,0.68) (0.47,0.53) (0.35,0.39,0.26) (0.47,0.23, 0.3) (0.94,0.06)	(12,14,17,18)	0,8635	0,1365	0,0397	178,3985	28	1022	0,1365	0,4154	5970
16	(0.05,0.41,0.54) (0.68,0.32) (0.42,0.58) (0.7,0.18,0.12) (0.4,0.06,0.54) (0.09,0.91)	(4,9,14,16,18)	0,9792	0,0208	0,0257	74,8841	29	1032	0,0208	0,4214	6096
17	(0.41, 0.3,0.29) (0.51,0.49) (0.58,0.42) (0.35,0.37,0.28) (0.34,0.22,0.44) (0.69,0.31)	(7,12,16,18)	0,8561	0,1439	0,0185	38,7072	27	1007	0,1439	0,4111	5918
18	(0.32,0.42,0.26) (0.68,0.32) (0.5, 0.5) (0.18,0.48,0.34) (0.34,0.43,0.23) (0.08,0.92)	(3,5,14,16,18)	0,9772	0,0228	0,0272	83,95	28	1030	0,0228	0,4087	6118
19	(0.36,0.31,0.33) (0.51,0.49) (0.55,0.45) (0.29,0.31, 0.4) (0.38,0.32, 0.3) (0.71,0.29)	(1,12,18)	0,8518	0,1482	0,0306	106,3879	28	1023	0,1482	0,4174	6187
20	(0.31,0.34,0.35) (0.62,0.38) (0.58,0.42) (0.3,0.34,0.36) (0.41,0.28,0.31) (0.08,0.92)	(5,13,14,17,18)	0,9786	0,0214	0,0192	41,5542	27	1006	0,0214	0,4159	6180
21	(0.34,0.36, 0.3) (0.54,0.46) (0.57,0.43) (0.41,0.27,0.32) (0.24,0.22,0.54) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	28	1029	0,1382	0,4130	6274
	(0.41, 0.3,0.29)										

22	(0.64,0.36) (0.63,0.37) (0.3,0.32,0.38) (0.27,0.34,0.39) (0.71,0.29)	(7,12,18)	0,8522	0,1478	0,0307	106,9596	28	1009	0,1478	0,4261	6077
23	(0.12,0.22,0.66) (0.46,0.54) (0.23,0.77) (0.41,0.35,0.24) (0.29,0.05,0.66) (0.07,0.93)	(12,15,18)	0,9749	0,0251	0,0327	121,4675	28	1007	0,0251	0,4055	6197
24	(0.4,0.36,0.24) (0.62,0.38) (0.11,0.89) (0.32,0.27,0.41) (0.31,0.45,0.24) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	28	1018	0,1255	0,4173	6136
25	(0.38,0.34,0.28) (0.53,0.47) (0.57,0.43) (0.43, 0.3,0.27) (0.34,0.28,0.38) (0.69,0.31)	(7,12,16,18)	0,8545	0,1455	0,0185	38,6997	28	1026	0,1455	0,4127	6199
26	(0.36,0.32,0.32) (0.4, 0.6) (0.26,0.74) (0.29,0.32,0.39) (0.36,0.32,0.32) (0.71,0.29)	(1,12,18)	0,8518	0,1482	0,0306	106,3879	28	1027	0,1482	0,4019	6275
27	(0.33,0.31,0.36) (0.57,0.43) (0.61,0.39) (0.4,0.32,0.28) (0.33,0.31,0.36) (0.08,0.92)	(5,10,14,17,18)	0,9784	0,0216	0,0279	87,8482	28	1031	0,0216	0,4262	6184
28	(0.53,0.31,0.16) (0.37,0.63) (0.57,0.43) (0.05,0.78,0.17) (0.35,0.37,0.28) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	29	1021	0,1382	0,4262	6099
29	(0.34,0.37,0.29) (0.54,0.46) (0.08,0.92) (0.39,0.39,0.22) (0.44, 0.3,0.26) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	27	1014	0,1382	0,4121	6084
30	(0.35,0.32,0.33) (0.54,0.46) (0.5, 0.5) (0.28,0.37,0.35) (0.31,0.34,0.35) (0.71,0.29)	(1,12,18)	0,8518	0,1482	0,0306	106,3879	28	1027	0,1482	0,4088	6147

Tabla A.B.1.3: Resultados de proporciones de datos (distribución de landmarks) para granularidad (3,2,2,3,3,2). Concentración Local Máxima de Ozono en Mexico usando la función de costo 1-Q (2000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	1-Q	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(0.38,0.28,0.34) (0.57,0.43) (0.73,0.27) (0.32,0.31,0.37) (0.35,0.35, 0.3) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	56	2002	0,1382	0,4112	11696
2	(0.34,0.34,0.32) (0.33,0.67) (0.44,0.56) (0.32,0.29,0.39) (0.31,0.39, 0.3) (0.71,0.29)	(1,12,18)	0,8518	0,1482	0,0306	106,3879	57	2034	0,1482	0,4185	12111
3	(0.35,0.34,0.31) (0.66,0.34) (0.48,0.52) (0.39,0.15,0.46) (0.35,0.19,0.46) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	57	2016	0,1382	0,4090	11961
4	(0.41,0.25,0.34) (0.53,0.47) (0.63,0.37) (0.09, 0.2,0.71) (0.25,0.15, 0.6) (0.09,0.91)	(5,11,14,17,18)	0,9784	0,0216	0,0295	98,7621	56	2027	0,0216	0,4220	12091
5	(0.37,0.31,0.32) (0.4, 0.6) (0.6, 0.4) (0.48,0.33,0.19) (0.37,0.54,0.09) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	57	2020	0,1255	0,4262	11675
6	(0.39,0.33,0.28) (0.52,0.48) (0.55,0.45) (0.41,0.34,0.25) (0.66,0.16,0.18) (0.69,0.31)	(7,12,17,18)	0,8677	0,1323	0,0189	40,3655	56	2017	0,1323	0,4173	11662
7	(0.39,0.32,0.29) (0.61,0.39) (0.5, 0.5) (0.34,0.39,0.27) (0.57,0.26,0.17) (0.69,0.31)	(7,12,17,18)	0,8678	0,1322	0,019	40,7913	57	2028	0,1322	0,4059	11773
8	(0.57,0.28,0.15) (0.4, 0.6) (0.75,0.25) (0.2,0.71,0.09) (0.23,0.19,0.58) (0.09,0.91)	(5,11,14,17,18)	0,9776	0,0224	0,03	101,9912	57	2001	0,0224	0,3986	11830
9	(0.44,0.33,0.23) (0.68,0.32) (0.52,0.48) (0.33,0.38,0.29) (0.14,0.29,0.57) (0.09,0.91)	(5,10,14,17,18)	0,9814	0,0186	0,0288	93,8601	56	2009	0,0186	0,4064	11900
10	(0.36,0.31,0.33) (0.31,0.69) (0.64,0.36) (0.23, 0.3,0.47) (0.3,0.45,0.25) (0.71,0.29)	(1,12,18)	0,8518	0,1482	0,0306	106,3879	57	2030	0,1482	0,4136	12395

11	(0.41,0.33,0.26) (0.29,0.71) (0.42,0.58) (0.29,0.36,0.35) (0.33,0.35,0.32) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	58	2005	0,1382	0,4230	11997
12	(0.35,0.36,0.29) (0.71,0.29) (0.3, 0.7) (0.44,0.33,0.23) (0.22,0.52,0.26) (0.09,0.91)	(5,14,15,16,18)	0,9811	0,0189	0,0219	54,4835	57	2001	0,0189	0,4188	12323
13	(0.37,0.33, 0.3) (0.47,0.53) (0.48,0.52) (0.24,0.44,0.32) (0.3,0.34,0.36) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	56	2001	0,1255	0,4104	12125
14	(0.26,0.53,0.21) (0.41,0.59) (0.43,0.57) (0.3,0.32,0.38) (0.26,0.36,0.38) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	56	2031	0,1382	0,4129	12379
15	(0.38, 0.3,0.32) (0.47,0.53) (0.48,0.52) (0.34,0.28,0.38) (0.1,0.51,0.39) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	57	2016	0,1255	0,4177	12127
16	(0.36, 0.3,0.34) (0.66,0.34) (0.42,0.58) (0.33,0.36,0.31) (0.29,0.36,0.35) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	57	2036	0,1255	0,4185	12366
17	(0.38,0.34,0.28) (0.49,0.51) (0.44,0.56) (0.37,0.33, 0.3) (0.28,0.32, 0.4) (0.09,0.91)	(5,14,16,17,18)	0,9783	0,0217	0,029	95,0338	56	2018	0,0217	0,4082	12261
18	(0.47,0.26,0.27) (0.58,0.42) (0.57,0.43) (0.28,0.44,0.28) (0.47,0.28,0.25) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	56	2025	0,1382	0,4193	12151
19	(0.19,0.29,0.52) (0.6, 0.4) (0.38,0.62) (0.35,0.15, 0.5) (0.13,0.45,0.42) (0.07,0.93)	(5,10,14,16,18)	0,9784	0,0216	0,029	94,9174	56	2008	0,0216	0,4113	12550
20	(0.36,0.33,0.31) (0.54,0.46) (0.47,0.53) (0.32,0.41,0.27) (0.56,0.26,0.18) (0.69,0.31)	(1,12,17,18)	0,8567	0,1433	0,0192	41,5987	57	2012	0,1433	0,4159	12049
21	(0.31,0.47,0.22) (0.44,0.56) (0.36,0.64) (0.44, 0.3,0.26) (0.32, 0.3,0.38) (0.08,0.92)	(5,14,16,17,18)	0,9790	0,0210	0,0294	98,0983	56	2002	0,0210	0,4097	12044
	(0.39,0.33,0.28)										

22	(0.55,0.45) (0.53,0.47) (0.39,0.26,0.35) (0.4, 0.4, 0.2) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	56	2003	0,1255	0,4262	11816
23	(0.38,0.33,0.29) (0.51,0.49) (0.59,0.41) (0.42,0.41,0.17) (0.32,0.46,0.22) (0.71,0.29)	(7,12,18)	0,8522	0,1478	0,0307	106,9596	57	2033	0,1478	0,4159	12052
24	(0.33,0.33,0.34) (0.71,0.29) (0.43,0.57) (0.13,0.33,0.54) (0.17,0.77,0.06) (0.07,0.93)	(9,10,14,16,18)	0,9771	0,0229	0,0257	74,8375	56	2019	0,0229	0,4030	12266
25	(0.32,0.39,0.29) (0.43,0.57) (0.56,0.44) (0.27,0.48,0.25) (0.28,0.31,0.41) (0.09,0.91)	(5,14,16,17,18)	0,9784	0,0216	0,0292	96,5724	57	2014	0,0216	0,4113	12253
26	(0.26,0.37,0.37) (0.58,0.42) (0.69,0.31) (0.06,0.73,0.21) (0.49,0.16,0.35) (0.09,0.91)	(5,11,14,17,18)	0,9789	0,0211	0,0294	97,8347	56	2011	0,0211	0,4153	12343
27	(0.36,0.34, 0.3) (0.49,0.51) (0.5, 0.5) (0.3,0.36,0.34) (0.25,0.21,0.54) (0.71,0.29)	(1,12,18)	0,8518	0,1482	0,0306	106,3879	57	2016	0,1482	0,4262	12242
28	(0.76,0.11,0.13) (0.51,0.49) (0.49,0.51) (0.35,0.28,0.37) (0.35,0.32,0.33) (0.08,0.92)	(5,10,14,17,18)	0,9764	0,0236	0,0274	85,3068	56	2005	0,0236	0,4253	12118
29	(0.4,0.31,0.29) (0.54,0.46) (0.41,0.59) (0.07,0.46,0.47) (0.27, 0.4,0.33) (0.71,0.29)	(7,12,18)	0,8522	0,1478	0,0307	106,9596	57	2018	0,1478	0,4195	11924
30	(0.16,0.17,0.67) (0.19,0.81) (0.29,0.71) (0.11, 0.6,0.29) (0.33,0.32,0.35) (0.09,0.91)	(12,15,18)	0,9745	0,0255	0,0315	112,1971	56	2001	0,0255	0,4162	12111

Tabla A.B.1.4: Resultados de proporciones de datos (distribución de landmarks) para granularidad (3,2,2,3,3,2). Concentración Local Máxima de Ozono en Mexico usando la función de costo 1-Q (4000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	1-Q	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(0.38,0.27,0.35) (0.33,0.67) (0.06,0.94) (0.26,0.39,0.35) (0.42,0.31,0.27) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	115	4034	0,1382	0,4078	23325
2	(0.4,0.33,0.27) (0.47,0.53) (0.52,0.48) (0.34,0.38,0.28) (0.6,0.24,0.16) (0.69,0.31)	(7,12,17,18)	0,8687	0,1313	0,0199	44,9704	114	4001	0,1313	0,4173	22864
3	(0.5,0.29,0.21) (0.76,0.24) (0.3, 0.7) (0.25,0.34,0.41) (0.36,0.59,0.05) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	114	4006	0,1255	0,4040	23275
4	(0.29,0.45,0.26) (0.62,0.38) (0.43,0.57) (0.55,0.31,0.14) (0.38,0.34,0.28) (0.07,0.93)	(3,10,14,17,18)	0,9786	0,0214	0,0267	81,0143	114	4023	0,0214	0,4175	23632
5	(0.4,0.31,0.29) (0.57,0.43) (0.39,0.61) (0.33,0.43,0.24) (0.61,0.22,0.17) (0.69,0.31)	(7,12,17,18)	0,8686	0,1314	0,0196	43,3373	114	4009	0,1314	0,4245	23007
6	(0.44,0.33,0.23) (0.69,0.31) (0.57,0.43) (0.23,0.43,0.34) (0.28,0.29,0.43) (0.09,0.91)	(2,5,14,17,18)	0,9793	0,0207	0,0281	89,4312	115	4027	0,0207	0,4232	23754
7	(0.53,0.05,0.42) (0.54,0.46) (0.51,0.49) (0.48,0.22, 0.3) (0.26,0.34, 0.4) (0.09,0.91)	(5,14,16,17,18)	0,9789	0,0211	0,0293	97,3409	114	4019	0,0211	0,4243	24041
8	(0.32,0.39,0.29) (0.64,0.36) (0.35,0.65) (0.37,0.24,0.39) (0.36,0.27,0.37) (0.09,0.91)	(3,11,14,17,18)	0,9792	0,0208	0,026	76,6875	114	4030	0,0208	0,4162	24078
9	(0.35,0.34,0.31) (0.74,0.26) (0.79,0.21) (0.49,0.45,0.06) (0.37,0.36,0.27) (0.94,0.06)	(3,12,15,18)	0,8705	0,1295	0,0207	48,5595	115	4033	0,1295	0,4052	23310
10	(0.38,0.35,0.27) (0.23,0.77) (0.43,0.57) (0.52,0.37,0.11) (0.33,0.33,0.34) (0.95,0.05)	(12,14,17,18)	0,8765	0,1235	0,0403	184,0468	114	4010	0,1235	0,4216	23406

11	(0.39,0.33,0.28) (0.48,0.52) (0.43,0.57) (0.26,0.42,0.32) (0.59,0.25,0.16) (0.69,0.31)	(7,12,17,18)	0,8684	0,1316	0,019	40,7267	115	4028	0,1316	0,4093	23079
12	(0.35,0.33,0.32) (0.58,0.42) (0.45,0.55) (0.33,0.38,0.29) (0.26,0.41,0.33) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	113	4023	0,1255	0,4171	23295
13	(0.37,0.32,0.31) (0.25,0.75) (0.47,0.53) (0.33,0.27, 0.4) (0.35,0.23,0.42) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	116	4033	0,1255	0,4251	23398
14	(0.34,0.38,0.28) (0.47,0.53) (0.57,0.43) (0.3,0.31,0.39) (0.32, 0.4,0.28) (0.09,0.91)	(3,5,14,17,18)	0,9742	0,0258	0,0269	81,9521	114	4025	0,0258	0,4262	23640
15	(0.39,0.34,0.27) (0.45,0.55) (0.63,0.37) (0.32,0.37,0.31) (0.48,0.18,0.34) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	114	4028	0,1382	0,4262	23156
16	(0.32,0.22,0.46) (0.77,0.23) (0.25,0.75) (0.23,0.36,0.41) (0.08,0.56,0.36) (0.09,0.91)	(3,5,14,16,18)	0,9806	0,0194	0,0277	87,1751	114	4020	0,0194	0,4117	23572
17	(0.26,0.58,0.16) (0.47,0.53) (0.65,0.35) (0.36, 0.4,0.24) (0.39,0.37,0.24) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	114	4012	0,1255	0,4074	22959
18	(0.4,0.48,0.12) (0.75,0.25) (0.39,0.61) (0.42, 0.2,0.38) (0.42,0.21,0.37) (0.09,0.91)	(5,10,14,17,18)	0,9819	0,0181	0,0283	90,5961	113	4018	0,0181	0,4251	23371
19	(0.33,0.31,0.36) (0.66,0.34) (0.5, 0.5) (0.4,0.33,0.27) (0.37,0.37,0.26) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	114	4017	0,1255	0,3974	23074
20	(0.25,0.29,0.46) (0.76,0.24) (0.17,0.83) (0.05,0.38,0.57) (0.14,0.25,0.61) (0.09,0.91)	(5,14,15,17,18)	0,9821	0,0179	0,0198	44,5927	114	4030	0,0179	0,4151	24261
21	(0.56,0.24, 0.2) (0.44,0.56) (0.55,0.45) (0.39,0.28,0.33) (0.25,0.35, 0.4) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	115	4025	0,1255	0,4205	23136
	(0.42,0.31,0.27)										

22	(0.52,0.48) (0.38,0.62) (0.37,0.26,0.37) (0.31,0.32,0.37) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	114	4034	0,1255	0,4134	23324
23	(0.27,0.39,0.34) (0.73,0.27) (0.53,0.47) (0.27,0.46,0.27) (0.65,0.17,0.18) (0.09,0.91)	(5,7,14,18)	0,9741	0,0259	0,0187	39,5779	115	4027	0,0259	0,4078	22960
24	(0.12,0.47,0.41) (0.61,0.39) (0.57,0.43) (0.24,0.09,0.67) (0.14,0.51,0.35) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	114	4032	0,1382	0,4205	23118
25	(0.31,0.42,0.27) (0.62,0.38) (0.87,0.13) (0.47,0.29,0.24) (0.35,0.25, 0.4) (0.09,0.91)	(5,14,16,17,18)	0,9818	0,0182	0,029	94,9985	114	4015	0,0182	0,4173	23809
26	(0.41, 0.3,0.29) (0.48,0.52) (0.48,0.52) (0.41,0.28,0.31) (0.06,0.55,0.39) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	116	4036	0,1382	0,4092	23177
27	(0.38,0.34,0.28) (0.4, 0.6) (0.47,0.53) (0.46,0.26,0.28) (0.24,0.31,0.45) (0.69,0.31)	(7,12,16,18)	0,8575	0,1425	0,0181	37,2566	113	4005	0,1425	0,4135	23182
28	(0.35,0.35, 0.3) (0.21,0.79) (0.53,0.47) (0.27,0.36,0.37) (0.42,0.15,0.43) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	114	4025	0,1382	0,4134	23340
29	(0.64,0.05,0.31) (0.52,0.48) (0.29,0.71) (0.29, 0.2,0.51) (0.21, 0.3,0.49) (0.09,0.91)	(5,14,16,17,18)	0,9787	0,0213	0,0295	98,4858	115	4017	0,0213	0,4215	23660
30	(0.36,0.32,0.32) (0.6, 0.4) (0.5, 0.5) (0.2,0.49,0.31) (0.3,0.39,0.31) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	114	4001	0,1382	0,4233	23482

Tabla A.B.1.5: Resultados de proporciones de datos (distribución de landmarks) para granularidad (3,2,2,3,3,2). Concentración Local Máxima de Ozono en Mexico usando la función de costo 1-Q (8000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	1-Q	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(0.37,0.32,0.31) (0.34,0.66) (0.64,0.36) (0.57,0.26,0.17) (0.25,0.37,0.38) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	228	8031	0,1255	0,4262	47955
2	(0.21,0.38,0.41) (0.59,0.41) (0.53,0.47) (0.34, 0.4,0.26) (0.32,0.25,0.43) (0.09,0.91)	5,14,16,17,18	0,9805	0,0195	0,0287	93,1787	228	8004	0,0195	0,4091	49044
3	(0.43,0.34,0.23) (0.5, 0.5) (0.28,0.72) (0.39,0.26,0.35) (0.6,0.23,0.17) (0.69,0.31)	(12,13,17,18)	0,8690	0,1310	0,0209	49,2416	229	8034	0,1310	0,4169	47281
4	(0.31,0.14,0.55) (0.2, 0.8) (0.9, 0.1) (0.35,0.34,0.31) (0.46, 0.4,0.14) (0.95,0.05)	6,12,14,15,18	0,8829	0,1171	0,022	54,7659	229	8022	0,1171	0,4134	46735
5	(0.24,0.46, 0.3) (0.68,0.32) (0.62,0.38) (0.38,0.28,0.34) (0.37,0.27,0.36) (0.09,0.91)	5,10,14,17,18	0,9806	0,0194	0,0279	87,8666	230	8024	0,0194	0,4262	47562
6	(0.26,0.28,0.46) (0.93,0.07) (0.49,0.51) (0.2,0.74,0.06) (0.26,0.13,0.61) (0.09,0.91)	(12,14,18)	0,9818	0,0182	0,0328	121,9277	229	8001	0,0182	0,4163	47531
7	(0.06,0.34, 0.6) (0.33,0.67) (0.21,0.79) (0.44,0.41,0.15) (0.37,0.53, 0.1) (0.09,0.91)	(12,16,18)	0,9756	0,0244	0,0503	286,1396	229	8007	0,0244	0,4162	47722
8	(0.3,0.41,0.29) (0.71,0.29) (0.51,0.49) (0.35,0.41,0.24) (0.28,0.19,0.53) (0.08,0.92)	(2,5,14,17,18)	0,9812	0,0188	0,0274	85,0461	229	8019	0,0188	0,4173	48147
9	(0.42,0.35,0.23) (0.47,0.53) (0.51,0.49) (0.29,0.35,0.36) (0.6,0.24,0.16) (0.69,0.31)	(12,13,17,18)	0,8690	0,1310	0,0203	46,7125	229	8009	0,1310	0,4205	45892
10	(0.33,0.55,0.12) (0.42,0.58) (0.83,0.17) (0.32,0.32,0.36) (0.39,0.27,0.34) (0.09,0.91)	5,14,16,17,18	0,9776	0,0224	0,0288	94,2453	228	8004	0,0224	0,4137	47213

11	(0.39,0.32,0.29) (0.61,0.39) (0.57,0.43) (0.43,0.24,0.33) (0.28,0.32, 0.4) (0.08,0.92)	5,10,14,17,18	0,9796	0,0204	0,0286	92,6597	231	8031	0,0204	0,4217	46558
12	(0.17,0.42,0.41) (0.64,0.36) (0.34,0.66) (0.39,0.37,0.24) (0.13,0.55,0.32) (0.09,0.91)	3,14,16,17,18	0,9806	0,0194	0,0275	85,5218	227	8006	0,0194	0,4203	48119
13	(0.37,0.35,0.28) (0.39,0.61) (0.54,0.46) (0.37,0.36,0.27) (0.52,0.29,0.19) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	229	8011	0,1255	0,4243	45826
14	(0.31,0.07,0.62) (0.23,0.77) (0.27,0.73) (0.45,0.34,0.21) (0.64,0.23,0.13) (0.95,0.05)	(12,14,17,18)	0,8797	0,1203	0,0427	206,4655	227	8003	0,1203	0,4262	45693
15	(0.44,0.18,0.38) (0.59,0.41) (0.57,0.43) (0.4,0.37,0.23) (0.31,0.37,0.32) (0.09,0.91)	5,10,14,17,18	0,9803	0,0197	0,028	88,7462	230	8020	0,0197	0,4175	47149
16	(0.2,0.12,0.68) (0.64,0.36) (0.34,0.66) (0.54,0.11,0.35) (0.18,0.25,0.57) (0.09,0.91)	(3,5,14,17,18)	0,9796	0,0204	0,0253	72,5637	230	8018	0,0204	0,4121	47928
17	(0.54, 0.1,0.36) (0.11,0.89) (0.47,0.53) (0.22,0.52,0.26) (0.3,0.32,0.38) (0.94,0.06)	(1,12,14,18)	0,8776	0,1224	0,0222	55,603	230	8006	0,1224	0,4129	45704
18	(0.36,0.31,0.33) (0.65,0.35) (0.5, 0.5) (0.45,0.13,0.42) (0.52,0.08, 0.4) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	228	8022	0,1255	0,4075	46705
19	(0.12,0.42,0.46) (0.41,0.59) (0.66,0.34) (0.35,0.27,0.38) (0.35,0.18,0.47) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	229	8006	0,1255	0,4174	46175
20	(0.45,0.14,0.41) (0.66,0.34) (0.47,0.53) (0.25, 0.4,0.35) (0.16, 0.4,0.44) (0.09,0.91)	(3,5,14,17,18)	0,9793	0,0207	0,0248	69,9191	228	8015	0,0207	0,4048	47027
21	(0.39,0.33,0.28) (0.5, 0.5) (0.47,0.53) (0.41,0.29, 0.3) (0.58,0.25,0.17) (0.7, 0.3)	(7,12,17,18)	0,8648	0,1352	0,0195	43,1627	230	8002	0,1352	0,4113	46033
	(0.14,0.72,0.14)										

22	(0.37,0.63) (0.87,0.13) (0.58,0.14,0.28) (0.43,0.36,0.21) (0.94,0.06)	(12,15,17,18)	0,8646	0,1354	0,0476	256,5306	230	8003	0,1354	0,4161	45840
23	(0.4,0.32,0.28) (0.47,0.53) (0.45,0.55) (0.5,0.29,0.21) (0.53,0.28,0.19) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	230	8026	0,1255	0,4044	45632
24	(0.21,0.53,0.26) (0.58,0.42) (0.46,0.54) (0.39,0.34,0.27) (0.3, 0.3, 0.4) (0.09,0.91)	5,14,16,17,18	0,9808	0,0192	0,0288	93,7634	228	8040	0,0192	0,4150	47775
25	(0.31,0.34,0.35) (0.62,0.38) (0.81,0.19) (0.3,0.41,0.29) (0.44,0.32,0.24) (0.95,0.05)	(12,15,17,18)	0,8861	0,1139	0,0377	161,2259	231	8028	0,1139	0,4203	45183
26	(0.18,0.37,0.45) (0.6, 0.4) (0.48,0.52) (0.4,0.39,0.21) (0.43,0.26,0.31) (0.09,0.91)	5,10,14,17,18	0,9809	0,0191	0,0287	93,2751	231	8026	0,0191	0,4173	47376
27	(0.43,0.08,0.49) (0.56,0.44) (0.64,0.36) (0.38,0.28,0.34) (0.41,0.32,0.27) (0.09,0.91)	5,10,14,17,18	0,9778	0,0222	0,0276	86,1224	229	8031	0,0222	0,4173	46885
28	(0.38,0.34,0.28) (0.45,0.55) (0.56,0.44) (0.34,0.26, 0.4) (0.62,0.22,0.16) (0.69,0.31)	(7,12,17,18)	0,8689	0,1311	0,0183	37,8893	228	8001	0,1311	0,4179	45556
29	(0.29,0.26,0.45) (0.62,0.38) (0.73,0.27) (0.37,0.39,0.24) (0.34,0.24,0.42) (0.09,0.91)	5,14,16,17,18	0,9811	0,0189	0,0286	92,632	229	8031	0,0189	0,4051	47473
30	(0.23, 0.6,0.17) (0.49,0.51) (0.69,0.31) (0.26,0.56,0.18) (0.08,0.54,0.38) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	230	8026	0,1255	0,4068	46152

Tabla A.B.2.2: Resultados de proporciones de datos (distribución de landmarks) para la granularidad (3,2,2,8,2,2). Concentración Local Máxima de Ozono en Mexico el error de predicción del último 25% de datos del conjunto de datos de training como función de costo (FCMSEtrain) (1000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	FCRMStrain (%)	FCMSEtrain (%)	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(0.39,0.34,0.27) (0.52,0.48) (0.46,0.54) (0.2,0.11,0.09, 0.1,0.11,0.14,0.13,0.12) (0.55,0.45) (0.41,0.59)	(12,13,14,17,18)	0,7250	0,0178	43,2424	0,0186	39,3705	28	1020	43,24	570,57	6165
2	(0.23, 0.6,0.17) (0.51,0.49) (0.74,0.26) (0.08,0.15,0.09,0.06,0.05,0.17,0.08,0.32) (0.64,0.36) (0.48,0.52)	(12,13,14,17,18)	0,6307	0,0168	38,58	0,0201	45,7342	28	1033	38,58	584,41	6174
3	(0.44,0.36, 0.2) (0.65,0.35) (0.48,0.52) (0.15,0.14,0.08,0.13,0.14,0.15,0.13,0.08) (0.67,0.33) (0.53,0.47)	(12,13,17,18)	0,7071	0,0177	43,141	0,0198	44,2643	28	1013	43,14	570,82	6283
4	(0.19,0.34,0.47) (0.41,0.59) (0.46,0.54) (0.13,0.18,0.16,0.13,0.12,0.08,0.09,0.11) (0.52,0.48) (0.44,0.56)	(3,12,14,15,18)	0,6105	0,0176	42,6353	0,0238	63,9364	28	1026	42,64	16423,01	6258
5	(0.62,0.18, 0.2) (0.54,0.46) (0.6, 0.4) (0.13,0.08,0.14, 0.2,0.07,0.13,0.17,0.08) (0.63,0.37) (0.42,0.58)	(1,12,14,17,18)	0,6117	0,018	44,2157	0,0225	57,2082	28	1020	44,22	16423,01	6351
6	(0.29,0.51, 0.2) (0.52,0.48) (0.67,0.33) (0.09,0.11,0.09,0.12,0.17,0.22,0.11,0.09) (0.57,0.43) (0.58,0.42)	(12,13,14,17,18)	0,6945	0,0171	39,9032	0,0201	45,6649	28	1032	39,90	570,57	6253
7	(0.53,0.25,0.22) (0.39,0.61) (0.27,0.73) (0.08,0.11, 0.2,0.15,0.11,0.07,0.09,0.19) (0.54,0.46) (0.83,0.17)	(5,13,14,17,18)	0,7650	0,0177	42,774	0,0189	40,3198	28	1004	42,77	532,93	6278
8	(0.21,0.49, 0.3) (0.62,0.38) (0.76,0.24) (0.05,0.06,0.06,0.06,0.05,0.05, 0.3,0.37) (0.72,0.28) (0.76,0.24)	(3,12,15,17,18)	0,7472	0,0169	39,1253	0,0215	52,4107	28	1009	39,13	570,57	6271
9	(0.25, 0.6,0.15) (0.44,0.56) (0.54,0.46) (0.09,0.17,0.12,0.24,0.13,0.11,0.07,0.07) (0.67,0.33) (0.49,0.51)	(12,13,14,17,18)	0,6245	0,0174	41,4301	0,0214	51,7488	28	1002	41,43	16423,01	6017
10	(0.27,0.15,0.58) (0.29,0.71) (0.76,0.24) (0.12,0.07,0.08,0.17,0.06,0.18,0.05,0.27) (0.69,0.31) (0.73,0.27)	(1,12,18)	0,7479	0,0175	42,3887	0,0219	54,3118	28	1021	42,39	16423,01	6189

11	(0.29,0.58,0.13) (0.35,0.65) (0.42,0.58) (0.09,0.09,0.24,0.07, 0.1,0.08, 0.1,0.23) (0.67,0.33) (0.41,0.59)	(11,12,13,15,18)	0,6612	0,0163	36,4081	0,0208	49,0506	27	1010	36,41	511,55	6101
12	(0.25,0.62,0.13) (0.5, 0.5) (0.47,0.53) (0.12,0.13,0.11,0.23, 0.1,0.11,0.12,0.08) (0.58,0.42) (0.51,0.49)	(12,13,14,17,18)	0,6364	0,0175	41,7967	0,0202	46,2393	28	1035	41,80	16423,01	6576
13	(0.5,0.19,0.31) (0.67,0.33) (0.49,0.51) (0.15, 0.1,0.08,0.14,0.25,0.08, 0.1, 0.1) (0.58,0.42) (0.48,0.52)	(3,11,12,15,18)	0,5703	0,0169	39,141	0,0203	46,6405	29	1030	39,14	511,55	6506
14	(0.41,0.24,0.35) (0.42,0.58) (0.41,0.59) (0.11,0.12,0.16,0.15,0.12,0.13, 0.1,0.11) (0.62,0.38) (0.47,0.53)	(12,13,14,17,18)	0,6493	0,0174	41,6544	0,019	40,947	28	1022	41,65	16423,01	6342
15	(0.36,0.26,0.38) (0.34,0.66) (0.48,0.52) (0.14,0.12,0.16,0.11,0.13,0.13,0.09,0.12) (0.5, 0.5) (0.63,0.37)	(1,12,18)	0,8116	0,0177	43,2947	0,0219	54,3592	28	1010	43,29	570,57	6344
16	(0.34,0.32,0.34) (0.52,0.48) (0.76,0.24) (0.06,0.07,0.05, 0.2,0.16,0.13, 0.1,0.23) (0.66,0.34) (0.4, 0.6)	(7,12,14,17,18)	0,7170	0,0178	43,299	0,0191	41,1961	27	1001	43,30	570,57	6246
17	(0.23,0.45,0.32) (0.36,0.64) (0.49,0.51) (0.07,0.15,0.06, 0.1, 0.2,0.06,0.13,0.23) (0.5, 0.5) (0.5, 0.5)	(1,12,16,18)	0,6610	0,0179	44,2235	0,0197	43,8918	28	1027	44,22	16423,01	6452
18	(0.45,0.31,0.24) (0.52,0.48) (0.4, 0.6) (0.13,0.11,0.11,0.16,0.14,0.08,0.09,0.18) (0.58,0.42) (0.64,0.36)	(12,13,14,17,18)	0,8429	0,0171	39,9073	0,0183	37,8876	27	1001	39,91	16423,01	6294
19	(0.33,0.23,0.44) (0.46,0.54) (0.75,0.25) (0.08,0.08,0.19,0.06,0.27,0.08,0.06,0.18) (0.59,0.41) (0.77,0.23)	(3,12,15,17,18)	0,7400	0,0171	40,4781	0,0217	53,4058	28	1017	40,48	16423,01	6203
20	(0.32,0.48, 0.2) (0.51,0.49) (0.57,0.43) (0.11,0.13, 0.1,0.09, 0.1, 0.2,0.13,0.14) (0.58,0.42) (0.6, 0.4)	(12,13,14,17,18)	0,7221	0,0168	38,436	0,0195	43,0863	28	1031	38,44	549,66	6193
21	(0.39,0.27,0.34) (0.4, 0.6) (0.35,0.65) (0.08,0.11,0.18,0.09,0.18,0.13,0.15,0.08) (0.59,0.41) (0.41,0.59)	(12,13,14,17,18)	0,7099	0,0175	41,9458	0,0185	38,5756	28	1005	41,95	16423,01	6370
	(0.38, 0.3,0.32)											

22	(0.6, 0.4) (0.5, 0.5) (0.12,0.15, 0.1,0.14,0.13,0.13,0.11,0.12) (0.56,0.44) (0.76,0.24)	(1,5,8,17,18)	0,7881	0,0177	42,9952	0,019	41,0635	28	1007	43,00	532,93	6368
23	(0.51,0.12,0.37) (0.72,0.28) (0.51,0.49) (0.13,0.18, 0.1,0.13,0.12,0.18,0.08,0.08) (0.66,0.34) (0.57,0.43)	(3,11,12,15,18)	0,6198	0,0179	43,9366	0,0201	45,6276	28	1027	43,94	511,55	6393
24	(0.24,0.52,0.24) (0.52,0.48) (0.48,0.52) (0.14,0.14,0.12,0.16,0.13,0.11,0.12,0.08) (0.59,0.41) (0.54,0.46)	(7,12,14,17,18)	0,6750	0,017	39,4339	0,0197	44,0718	28	1022	39,43	16423,01	6080
25	(0.35,0.26,0.39) (0.52,0.48) (0.44,0.56) (0.11,0.14,0.08,0.11, 0.2, 0.1,0.07,0.19) (0.56,0.44) (0.41,0.59)	(7,12,14,17,18)	0,7074	0,018	44,2774	0,0198	44,2597	28	1015	44,28	511,55	6190
26	(0.71, 0.1,0.19) (0.62,0.38) (0.81,0.19) (0.13,0.06,0.06,0.07,0.38,0.12,0.09,0.09) (0.6, 0.4) (0.89,0.11)	(3,11,12,15,18)	0,7946	0,0167	38,3914	0,0231	60,358	27	1002	38,39	570,57	6308
27	(0.29,0.55,0.16) (0.51,0.49) (0.43,0.57) (0.15,0.12,0.12,0.12,0.15,0.16, 0.1,0.08) (0.6, 0.4) (0.57,0.43)	(12,13,14,17,18)	0,6598	0,0168	38,568	0,02	45,4155	28	1014	38,57	16423,01	6255
28	(0.39,0.28,0.33) (0.46,0.54) (0.39,0.61) (0.12,0.14,0.13,0.13, 0.1,0.18,0.07,0.13) (0.53,0.47) (0.4, 0.6)	(12,13,14,17,18)	0,7173	0,0175	42,1451	0,0194	42,6019	28	1025	42,15	16423,01	6155
29	(0.54,0.12,0.34) (0.35,0.65) (0.48,0.52) (0.09,0.17,0.06,0.24,0.27,0.07,0.05,0.05) (0.69,0.31) (0.53,0.47)	(3,11,12,15,18)	0,6073	0,0176	42,6676	0,0201	45,7466	28	1015	42,67	16423,01	6289
30	(0.29,0.48,0.23) (0.52,0.48) (0.5, 0.5) (0.13,0.12,0.14,0.16,0.12, 0.1, 0.1,0.13) (0.57,0.43) (0.55,0.45)	(7,12,14,17,18)	0,6845	0,0177	42,967	0,0199	44,8798	28	1029	42,97	16423,01	6470

Tabla A.B.2.3: Resultados de proporciones de datos (distribución de landmarks) para la granularidad (3,2,2,8,2,2). Concentración Local Máxima de Ozono en Mexico el error de predicción del último 25% de datos del conjunto de datos de training como función de costo (FCMSEtrain) (2000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	FCRMStrain (%)	FCMSEtrain (%)	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	**(0.12,0.45,0.43)** **(0.64,0.36)** **(0.85,0.15)** **(0.18,0.07,0.11,0.11,0.23,0.07,0.17,0.06)** **(0.37,0.63)** **(0.37,0.63)**	**(1,12,14,17,18)**	**0,6346**	**0,0173**	**41,0846**	**0,0211**	50,5523	56	2009	41,08	16423,01	12046
2	**(0.39,0.29,0.32)** **(0.45,0.55)** **(0.58,0.42)** **(0.14, 0.1,0.15,0.09,0.11,0.18, 0.1,0.13)** **(0.56,0.44)** **(0.41,0.59)**	**(12,13,14,17,18)**	**0,7176**	**0,0175**	**41,8408**	**0,0197**	44,0302	58	2018	41,84	16423,01	12047
3	**(0.38,0.28,0.34)** **(0.5, 0.5)** **(0.46,0.54)** **(0.14,0.11,0.05,0.22,0.14,0.07,0.06,0.21)** **(0.66,0.34)** **(0.41,0.59)**	**(12,13,14,17,18)**	**0,7092**	**0,0175**	**41,9977**	**0,0188**	40,1987	57	2020	42,00	16423,01	12612
4	(0.24,0.68,0.08) (0.57,0.43) (0.53,0.47) (0.16,0.12,0.15,0.13,0.13,0.13,0.09,0.09) (0.64,0.36) (0.53,0.47)	(3,11,12,15,18)	0,6051	0,0154	32,5828	0,0179	36,1803	56	2016	32,58	16423,01	11882
5	(0.1,0.15,0.75) (0.39,0.61) (0.48,0.52) (0.17,0.07,0.17,0.16,0.06,0.16,0.07,0.14) (0.63,0.37) (0.55,0.45)	(3,11,12,15,18)	0,6078	0,0162	35,9145	0,019	40,9026	56	2010	35,91	16423,01	12022
6	**(0.41,0.32,0.27)** **(0.45,0.55)** **(0.64,0.36)** **(0.12,0.12,0.12, 0.1,0.19,0.14,0.12,0.09)** **(0.57,0.43)** **(0.41,0.59)**	**(12,13,14,17,18)**	**0,7246**	**0,0175**	**42,044**	**0,0184**	38,3817	57	2029	42,04	16423,01	12377
7	**(0.4,0.29,0.31)** **(0.5, 0.5)** **(0.84,0.16)** **(0.16,0.09,0.23,0.13, 0.1,0.13,0.06, 0.1)** **(0.57,0.43)** **(0.41,0.59)**	**(12,13,14,17,18)**	**0,7165**	**0,0174**	**41,3379**	**0,0189**	40,2452	57	2015	41,34	570,82	12075
8	(0.09,0.44,0.47) (0.18,0.82) (0.71,0.29) (0.33,0.08,0.06,0.05,0.19,0.05,0.16,0.08) (0.64,0.36) (0.72,0.28)	(3,12,15,17,18)	0,7246	0,0164	36,9191	0,0221	55,1214	58	2028	36,92	16423,01	12587
9	**(0.34,0.28,0.38)** **(0.59,0.41)** **(0.58,0.42)** **(0.17, 0.1,0.14,0.13, 0.1,0.09,0.18,0.09)** **(0.48,0.52)** **(0.63,0.37)**	**(1,12,18)**	**0,8116**	**0,0177**	**43,2947**	**0,0219**	54,3592	58	2032	43,29	511,55	12643
10	**(0.38,0.36,0.26)** **(0.47,0.53)** **(0.41,0.59)** **(0.13,0.13,0.13,0.12,0.12,0.14,0.11,0.12)** **(0.56,0.44)** **(0.41,0.59)**	**(12,13,14,17,18)**	**0,7240**	**0,0177**	**42,7117**	**0,0187**	39,4535	57	2014	42,71	16423,01	12006

11	(0.46,0.18,0.36) (0.36,0.64) (0.44,0.56) (0.17,0.09,0.18,0.11,0.17,0.06,0.14,0.08) (0.75,0.25) (0.55,0.45)	(3,5,12,15,18)	0,6189	0,0171	40,3522	0,0208	49,2203	56	2001	40,35	16423,01	12313
12	(0.49, 0.4,0.11) (0.33,0.67) (0.47,0.53) (0.12,0.17,0.06,0.11,0.08,0.12,0.18,0.16) (0.37,0.63) (0.44,0.56)	(3,12,14,15,18)	0,6142	0,0176	42,4723	0,0222	56,0304	57	2034	42,47	16423,01	12582
13	**(0.44,0.34,0.22)** **(0.23,0.77)** **(0.59,0.41)** **(0.12,0.16,0.16,0.14,0.09, 0.1,0.12,0.11)** **(0.7, 0.3)** **(0.55,0.45)**	**(12,13,17,18)**	**0,7077**	**0,0174**	**41,7487**	**0,02**	45,4859	57	2013	41,75	16423,01	12392
14	**(0.27,0.53, 0.2)** **(0.51,0.49)** **(0.5, 0.5)** **(0.12,0.12,0.11,0.14,0.13,0.15, 0.1,0.13)** **(0.58,0.42)** **(0.6, 0.4)**	**(12,13,14,17,18)**	**0,7114**	**0,017**	**39,705**	**0,0195**	43,1676	56	2004	39,71	570,57	12206
15	**(0.25,0.62,0.13)** **(0.49,0.51)** **(0.45,0.55)** **(0.14,0.12,0.11,0.12,0.21, 0.1,0.12,0.08)** **(0.59,0.41)** **(0.63,0.37)**	**(12,13,14,17,18)**	**0,6961**	**0,0175**	**42,1406**	**0,0208**	48,8935	56	2009	42,14	532,93	12777
16	**(0.35,0.27,0.38)** **(0.45,0.55)** **(0.63,0.37)** **(0.18,0.05,0.19, 0.3,0.06,0.07,0.08,0.07)** **(0.46,0.54)** **(0.63,0.37)**	**(1,12,18)**	**0,8116**	**0,0177**	**43,2947**	**0,0219**	54,3592	56	2007	43,29	16423,01	12545
17	**(0.24,0.58,0.18)** **(0.53,0.47)** **(0.55,0.45)** **(0.12,0.11,0.15, 0.1,0.12,0.14,0.14,0.12)** **(0.61,0.39)** **(0.53,0.47)**	**(12,13,14,17,18)**	**0,6695**	**0,0169**	**39,001**	**0,0196**	43,5236	56	2028	39,00	16423,01	11976
18	**(0.35,0.25, 0.4)** **(0.45,0.55)** **(0.5, 0.5)** **(0.13,0.13,0.12,0.15,0.12,0.14,0.11, 0.1)** **(0.44,0.56)** **(0.63,0.37)**	**(1,12,18)**	**0,8116**	**0,0177**	**43,2947**	**0,0219**	54,3592	56	2002	43,29	16423,01	12223
19	**(0.27,0.63, 0.1)** **(0.21,0.79)** **(0.41,0.59)** **(0.14, 0.2,0.12,0.18,0.09,0.06,0.15,0.06)** **(0.65,0.35)** **(0.46,0.54)**	**(11,12,13,15,18)**	**0,6145**	**0,0173**	**41,2205**	**0,0208**	49,2006	56	2012	41,22	16423,01	12065
20	**(0.34,0.26, 0.4)** **(0.79,0.21)** **(0.51,0.49)** **(0.12,0.16,0.14,0.12,0.11,0.12,0.14,0.09)** **(0.51,0.49)** **(0.63,0.37)**	**(1,12,18)**	**0,8116**	**0,0177**	**43,2947**	**0,0219**	54,3592	56	2014	43,29	16423,01	12398
21	**(0.43,0.34,0.23)** **(0.44,0.56)** **(0.3, 0.7)** **(0.24,0.14,0.09,0.11,0.17,0.07,0.09,0.09)** **(0.59,0.41)** **(0.54,0.46)**	**(12,13,17,18)**	**0,7023**	**0,018**	**44,7695**	**0,0203**	46,5437	56	2003	44,77	16423,01	12498
	(0.46,0.14, 0.4)											

22	(0.64,0.36) (0.56,0.44) (0.1,0.08,0.13,0.17,0.06,0.13,0.13, 0.2) (0.67,0.33) (0.53,0.47)	(3,11,12,15,18)	0,5999	0,0159	34,8239	0,0182	37,3287	57	2038	34,82	16423,01	12809
23	(0.15,0.14,0.71) (0.41,0.59) (0.42,0.58) (0.11,0.15,0.09,0.13,0.12,0.11,0.14,0.15) (0.56,0.44) (0.54,0.46)	(3,11,12,15,18)	0,6124	0,0161	35,5747	0,0194	42,4188	56	2020	35,57	16423,01	12415
24	**(0.36,0.34, 0.3)** **(0.51,0.49)** **(0.63,0.37)** **(0.12,0.13,0.09,0.16,0.15,0.15, 0.1, 0.1)** **(0.63,0.37)** **(0.75,0.25)**	**(1,5,8,17,18)**	**0,7730**	**0,0171**	**40,1774**	**0,0193**	42,1148	57	2030	40,18	16423,01	12339
25	**(0.28,0.54,0.18)** **(0.5, 0.5)** **(0.54,0.46)** **(0.14,0.13,0.12,0.14,0.14,0.17, 0.1,0.06)** **(0.6, 0.4)** **(0.56,0.44)**	**(12,13,14,17,18)**	**0,6791**	**0,0168**	**38,541**	**0,0198**	44,4974	57	2033	38,54	570,82	12063
26	**(0.8,0.11,0.09)** **(0.51,0.49)** **(0.57,0.43)** **(0.18,0.09,0.09, 0.1,0.14,0.13,0.17, 0.1)** **(0.59,0.41)** **(0.55,0.45)**	**(12,13,14,17,18)**	**0,6390**	**0,0165**	**37,093**	**0,0219**	54,0869	56	2013	37,09	16423,01	12420
27	**(0.32,0.49,0.19)** **(0.52,0.48)** **(0.93,0.07)** **(0.11,0.08,0.14, 0.1,0.17,0.19,0.13,0.08)** **(0.56,0.44)** **(0.64,0.36)**	**(12,13,14,17,18)**	**0,7580**	**0,0174**	**41,6469**	**0,02**	45,2448	57	2009	41,65	16423,01	12001
28	(0.07,0.14,0.79) (0.6, 0.4) (0.53,0.47) (0.2,0.12,0.11,0.11,0.06,0.08,0.17,0.15) (0.61,0.39) (0.53,0.47)	(3,11,12,15,18)	0,6066	0,0159	34,916	0,0191	41,139	57	2032	34,92	16423,01	12359
29	**(0.29,0.51, 0.2)** **(0.49,0.51)** **(0.52,0.48)** **(0.13,0.13, 0.1,0.12,0.09,0.17,0.11,0.15)** **(0.65,0.35)** **(0.49,0.51)**	**(12,13,14,17,18)**	**0,6423**	**0,0169**	**39,0985**	**0,0201**	45,6291	56	2008	39,10	570,82	11788
30	(0.24,0.68,0.08) (0.58,0.42) (0.57,0.43) (0.14,0.11, 0.1,0.15,0.14,0.17, 0.1,0.09) (0.59,0.41) (0.57,0.43)	(3,11,12,15,18)	0,6082	0,016	35,4035	0,0184	38,2372	57	2021	35,40	16423,01	12188

Tabla A.B.2.4: Resultados de proporciones de datos (distribución de landmarks) para la granularidad (3,2,2,8,2,2). Concentración Local Máxima de Ozono en Mexico el error de predicción del último 25% de datos del conjunto de datos de training como función de costo (FCMSEtrain) (4000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	FCRMStrain (%)	FCMSEtrain (%)	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	**(0.24,0.57,0.19)** **(0.52,0.48)** **(0.55,0.45)** **(0.17,0.12, 0.1,0.11,0.12,0.11,0.15,0.12)** **(0.59,0.41)** **(0.54,0.46)**	**(12,13,14,17,18)**	**0,6655**	**0,0165**	**37,1427**	**0,0196**	43,6008	115	4024	37,14	16423,01	23719
2	**(0.23, 0.6,0.17)** **(0.51,0.49)** **(0.56,0.44)** **(0.14,0.13,0.16,0.12,0.12,0.11,0.12, 0.1)** **(0.6, 0.4)** **(0.53,0.47)**	**(12,13,14,17,18)**	**0,6659**	**0,0164**	**36,9471**	**0,0195**	42,9184	115	4030	36,95	16423,01	23395
3	**(0.32, 0.5,0.18)** **(0.52,0.48)** **(0.86,0.14)** **(0.13,0.13,0.15,0.12,0.13,0.14,0.09,0.11)** **(0.59,0.41)** **(0.55,0.45)**	**(12,13,14,17,18)**	**0,6850**	**0,0169**	**38,9207**	**0,0196**	43,3158	114	4004	38,92	16423,01	23674
4	(0.12,0.41,0.47) (0.52,0.48) (0.45,0.55) (0.11,0.13,0.18,0.11,0.12,0.11,0.09,0.15) (0.6, 0.4) (0.54,0.46)	(3,11,12,15,18)	0,6091	0,0161	35,6162	0,0188	40,2314	115	4022	35,62	16423,01	23602
5	**(0.42,0.43,0.15)** **(0.41,0.59)** **(0.47,0.53)** **(0.25,0.13,0.15,0.11,0.11,0.09,0.09,0.07)** **(0.6, 0.4)** **(0.46,0.54)**	**(11,12,13,15,18)**	**0,6294**	**0,0168**	**38,9089**	**0,0197**	43,8923	114	4020	38,91	16423,01	23867
6	(0.25,0.42,0.33) (0.79,0.21) (0.73,0.27) (0.11,0.06,0.05,0.25,0.07,0.24,0.05,0.17) (0.72,0.28) (0.79,0.21)	(3,12,15,17,18)	0,7563	0,0161	35,81	0,0212	50,9281	115	4031	35,81	570,82	24425
7	(0.25,0.08,0.67) (0.54,0.46) (0.45,0.55) (0.14,0.13,0.11,0.11,0.13,0.15,0.14,0.09) (0.63,0.37) (0.51,0.49)	(3,11,12,15,18)	0,5849	0,0155	32,984	0,0192	41,7531	114	4001	32,98	16423,01	24508
8	(0.25,0.67,0.08) (0.38,0.62) (0.4, 0.6) (0.19, 0.2,0.13, 0.1,0.23,0.05,0.05,0.05) (0.6, 0.4) (0.54,0.46)	(3,11,12,15,18)	0,6114	0,016	35,1652	0,0186	39,1083	114	4011	35,17	16423,01	23466
9	**(0.24,0.57,0.19)** **(0.51,0.49)** **(0.54,0.46)** **(0.08,0.19,0.22,0.07, 0.1,0.12,0.05,0.17)** **(0.58,0.42)** **(0.41,0.59)**	**(12,13,14,17,18)**	**0,6701**	**0,017**	**39,6939**	**0,0206**	48,0596	114	4007	39,69	16423,01	23723
10	**(0.24,0.56, 0.2)** **(0.52,0.48)** **(0.48,0.52)** **(0.15,0.18,0.14,0.12,0.09, 0.1,0.14,0.08)** **(0.6, 0.4)** **(0.6, 0.4)**	**(12,13,14,17,18)**	**0,7052**	**0,0165**	**37,3259**	**0,0194**	42,7723	112	4003	37,33	16423,01	24141

11	**(0.29,0.47,0.24)** **(0.51,0.49)** **(0.5, 0.5)** **(0.18,0.11, 0.1,0.16,0.13,0.11,0.07,0.14)** **(0.59,0.41)** **(0.53,0.47)**	**(7,12,14,17,18)**	**0,6867**	**0,0172**	**40,5386**	**0,0199**	44,648	114	4021	40,54	16423,01	23839
12	(0.08,0.47,0.45) (0.5, 0.5) (0.46,0.54) (0.13,0.21,0.12,0.13, 0.1,0.12, 0.1,0.09) (0.63,0.37) (0.54,0.46)	(3,11,12,15,18)	0,6084	0,016	35,1361	0,019	40,8957	114	4011	35,14	16423,01	23498
13	(0.16,0.38,0.46) (0.48,0.52) (0.45,0.55) (0.12,0.12,0.12,0.14,0.13,0.19,0.09,0.09) (0.62,0.38) (0.54,0.46)	(3,11,12,15,18)	0,6115	0,016	35,3154	0,0198	44,5398	114	4005	35,32	16423,01	24259
14	**(0.32,0.48, 0.2)** **(0.51,0.49)** **(0.44,0.56)** **(0.09,0.26,0.18,0.15,0.12,0.07,0.07,0.06)** **(0.67,0.33)** **(0.58,0.42)**	**(12,13,14,17,18)**	**0,7129**	**0,0169**	**39,2474**	**0,0191**	41,1509	113	4012	39,25	16423,01	24610
15	(0.28,0.64,0.08) (0.58,0.42) (0.55,0.45) (0.14, 0.1,0.14,0.15,0.09,0.12,0.19,0.07) (0.57,0.43) (0.53,0.47)	(3,11,12,15,18)	0,6004	0,0165	37,664	0,0198	44,4525	115	4022	37,66	16423,01	24543
16	(0.2,0.27,0.53) (0.45,0.55) (0.42,0.58) (0.21,0.08, 0.1,0.17,0.15,0.12,0.09,0.08) (0.56,0.44) (0.55,0.45)	(3,11,12,15,18)	0,6124	0,0161	35,5747	0,0194	42,4188	114	4023	35,57	16423,01	25167
17	**(0.22,0.58, 0.2)** **(0.51,0.49)** **(0.47,0.53)** **(0.13, 0.1,0.15,0.13,0.13,0.15,0.12,0.09)** **(0.58,0.42)** **(0.57,0.43)**	**(12,13,14,17,18)**	**0,6730**	**0,0168**	**38,6658**	**0,0199**	44,8445	114	4025	38,67	16423,01	25177
18	(0.46,0.42,0.12) (0.68,0.32) (0.55,0.45) (0.11,0.07,0.09,0.13,0.11,0.32,0.09,0.08) (0.63,0.37) (0.58,0.42)	(3,11,12,15,18)	0,6305	0,0153	32,4014	0,0189	40,3968	113	4022	32,40	16423,01	24714
19	(0.46,0.15,0.39) (0.34,0.66) (0.42,0.58) (0.09,0.07,0.32,0.18,0.07,0.09,0.11,0.07) (0.56,0.44) (0.53,0.47)	(3,11,12,15,18)	0,6124	0,0161	35,5747	0,0194	42,4188	114	4021	35,57	16423,01	25385
20	(0.24,0.68,0.08) (0.59,0.41) (0.42,0.58) (0.09,0.15,0.09,0.13,0.09,0.13,0.27,0.05) (0.56,0.44) (0.52,0.48)	(3,11,12,15,18)	0,5873	0,0151	31,2674	0,0196	43,59	114	4008	31,27	16423,01	24164
21	(0.1,0.35,0.55) (0.21,0.79) (0.54,0.46) (0.1,0.11,0.17,0.09,0.08,0.28,0.09,0.08) (0.6, 0.4) (0.53,0.47)	(3,11,12,15,18)	0,6053	0,0165	37,5722	0,0189	40,426	114	4023	37,57	16423,01	24841
	(0.19,0.18,0.63)											

22	(0.39,0.61) (0.43,0.57) (0.13,0.13,0.11,0.16,0.12, 0.1,0.16,0.09) (0.59,0.41) (0.51,0.49)	(3,11,12,15,18)	0,5918	0,0168	38,7193	0,0192	41,652	114	4022	38,72	16423,01	25530
23	(0.46,0.16,0.38) (0.61,0.39) (0.55,0.45) (0.12,0.17,0.11,0.12,0.12,0.08,0.14,0.14) (0.57,0.43) (0.53,0.47)	(3,11,12,15,18)	0,6004	0,0165	37,664	0,0198	44,4525	114	4023	37,66	16423,01	24348
24	(0.18,0.73,0.09) (0.69,0.31) (0.57,0.43) (0.23,0.12,0.16,0.05,0.15,0.16,0.06,0.07) (0.59,0.41) (0.58,0.42)	(3,11,12,15,18)	0,6221	0,0158	34,4066	0,0197	43,7615	115	4017	34,41	16423,01	24219
25	**(0.28,0.53,0.19)** **(0.51,0.49)** **(0.58,0.42)** **(0.27,0.09,0.09,0.12,0.08,0.08,0.07, 0.2)** **(0.59,0.41)** **(0.59,0.41)**	**(12,13,14,17,18)**	**0,6957**	**0,0165**	**37,4543**	**0,0201**	45,5276	114	4021	37,45	16423,01	24632
26	**(0.27,0.59,0.14)** **(0.42,0.58)** **(0.52,0.48)** **(0.08,0.15,0.07,0.22,0.09,0.13,0.15,0.11)** **(0.61,0.39)** **(0.46,0.54)**	**(11,12,13,14,18)**	**0,6285**	**0,0165**	**37,0904**	**0,0223**	56,348	113	4030	37,09	16423,01	23956
27	(0.2,0.23,0.57) (0.24,0.76) (0.42,0.58) (0.24,0.09,0.08,0.28,0.07,0.09, 0.1,0.05) (0.55,0.45) (0.52,0.48)	(3,11,12,15,18)	0,5846	0,0152	31,9237	0,0196	43,6897	114	4028	31,92	16423,01	25070
28	(0.15,0.15, 0.7) (0.48,0.52) (0.54,0.46) (0.11, 0.2,0.12, 0.2,0.09,0.09,0.09, 0.1) (0.63,0.37) (0.61,0.39)	(3,11,12,15,18)	0,6752	0,017	39,9322	0,019	40,7394	114	4014	39,93	16423,01	24699
29	**(0.24,0.56, 0.2)** **(0.52,0.48)** **(0.6, 0.4)** **(0.09,0.19,0.19,0.17,0.08,0.12,0.06, 0.1)** **(0.6, 0.4)** **(0.55,0.45)**	**(12,13,14,17,18)**	**0,6659**	**0,0164**	**36,9471**	**0,0195**	42,9184	115	4025	36,95	16423,01	23619
30	**(0.38,0.33,0.29)** **(0.52,0.48)** **(0.34,0.66)** **(0.13, 0.1,0.11,0.15, 0.1,0.11,0.14,0.16)** **(0.59,0.41)** **(0.64,0.36)**	**(7,12,14,17,18)**	**0,8437**	**0,0173**	**40,8856**	**0,0185**	38,9097	114	4005	40,89	16423,01	24799

Tabla A.B.2.5: Resultados de proporciones de datos (distribución de landmarks) para la granularidad (3,2,2,8,2,2). Concentración Local Máxima de Ozono en Mexico usando el error de predicción del último 25% de datos del conjunto de datos de training como función de costo (FCMSEtrain) (8000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	FCRMStrain (%)	FCMSEtrain (%)	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(0.24,0.56, 0.2) (0.52,0.48) (0.27,0.73) (0.16,0.12,0.15,0.15,0.13,0.19,0.05,0.05) (0.6, 0.4) (0.54,0.46)	(12,13,14,17,18)	0,6659	0,0164	36,9471	0,0195	42,9184	229	8014	36,9471	16423,01	48800,66
2	(0.16,0.38,0.46) (0.64,0.36) (0.45,0.55) (0.09,0.12,0.12,0.18,0.12,0.12,0.05, 0.2) (0.62,0.38) (0.53,0.47)	(3,11,12,15,18)	0,6115	0,016	35,3154	0,0198	44,5398	230	8020	35,3154	16423,01	48345,93
3	(0.11,0.46,0.43) (0.73,0.27) (0.52,0.48) (0.22, 0.1,0.09,0.27, 0.1,0.08,0.06,0.08) (0.56,0.44) (0.54,0.46)	(3,11,12,15,18)	0,6015	0,0168	38,6651	0,0199	44,888	230	8024	38,6651	16423,01	48671,71
4	(0.47,0.41,0.12) (0.62,0.38) (0.57,0.43) (0.12, 0.2,0.11,0.14,0.09, 0.1,0.09,0.15) (0.59,0.41) (0.6, 0.4)	(3,11,12,15,18)	0,6399	0,0153	32,1271	0,0204	46,9784	229	8017	32,1271	16423,01	47143,3
5	(0.1,0.38,0.52) (0.66,0.34) (0.44,0.56) (0.11,0.13, 0.1, 0.1,0.12,0.25,0.07,0.12) (0.52,0.48) (0.53,0.47)	(3,11,12,15,18)	0,6019	0,0148	30,2721	0,02	45,1803	229	8011	30,2721	16423,01	49833,85
6	(0.46, 0.2,0.34) (0.52,0.48) (0.45,0.55) (0.15,0.07,0.11,0.11,0.14,0.11,0.15,0.16) (0.63,0.37) (0.54,0.46)	(3,11,12,15,18)	0,6102	0,0155	32,918	0,019	40,6707	230	8025	32,918	16423,01	49716,54
7	(0.18,0.34,0.48) (0.34,0.66) (0.44,0.56) (0.13,0.06,0.17,0.11,0.09,0.16,0.17,0.11) (0.41,0.59) (0.44,0.56)	(3,12,14,15,18)	0,6132	0,0166	37,7833	0,0228	58,8917	229	8015	37,7833	16423,01	48590,02
8	(0.39, 0.3,0.31) (0.47,0.53) (0.57,0.43) (0.1,0.16, 0.1,0.16,0.16,0.13,0.09, 0.1) (0.56,0.44) (0.41,0.59)	(12,13,14,17,18)	0,7174	0,0172	40,752	0,0194	42,5125	229	8013	40,752	16423,01	47934,36
9	(0.48,0.41,0.11) (0.67,0.33) (0.53,0.47) (0.12,0.08,0.16, 0.1,0.18,0.12,0.12,0.12) (0.61,0.39) (0.55,0.45)	(3,11,12,15,18)	0,6066	0,0159	34,916	0,0191	41,139	229	8031	34,916	16423,01	46959,42
10	(0.18,0.25,0.57) (0.45,0.55) (0.4, 0.6) (0.08,0.15, 0.1, 0.1,0.14,0.11,0.19,0.13) (0.56,0.44) (0.54,0.46)	(3,11,12,15,18)	0,6076	0,0158	34,4775	0,0196	43,6266	230	8014	34,4775	16423,01	49999,16

11	(0.54,0.34,0.12) (0.62,0.38) (0.53,0.47) (0.08,0.11,0.06,0.35,0.06,0.06,0.17,0.11) (0.63,0.37) (0.6, 0.4)	(3,11,12,15,18)	0,6548	0,0154	32,8448	0,0199	44,8405	230	8032	32,8448	16423,01	49393,2
12	(0.5,0.39,0.11) (0.58,0.42) (0.53,0.47) (0.15,0.05,0.11,0.06,0.11,0.05,0.24,0.23) (0.63,0.37) (0.53,0.47)	(3,11,12,15,18)	0,6057	0,0148	30,3381	0,0193	42,0888	230	8013	30,3381	16423,01	49538,73
13	(0.23,0.14,0.63) (0.58,0.42) (0.57,0.43) (0.14,0.12,0.13,0.13,0.12, 0.1,0.14,0.12) (0.55,0.45) (0.47,0.53)	(4,12,13,18)	0,5759	0,0171	40,3776	0,0224	56,8248	230	8024	40,3776	16423,01	49535,75
14	(0.63,0.23,0.14) (0.55,0.45) (0.25,0.75) (0.16, 0.1,0.16,0.11,0.08,0.16,0.11,0.12) (0.78,0.22) (0.49,0.51)	(7,12,14,17,18)	0,5958	0,0168	38,7378	0,0205	47,4401	230	8015	38,7378	16423,01	49464,03
15	(0.43, 0.3,0.27) (0.52,0.48) (0.15,0.85) (0.18,0.15,0.14,0.16,0.13,0.05,0.14,0.05) (0.7, 0.3) (0.83,0.17)	(5,7,8,17,18)	0,8198	0,0165	37,4942	0,0187	39,6005	229	8013	37,4942	16423,01	47004,03
16	(0.39,0.27,0.34) (0.42,0.58) (0.48,0.52) (0.16,0.14,0.07,0.12,0.21,0.12,0.11,0.07) (0.6, 0.4) (0.49,0.51)	(12,13,14,17,18)	0,6489	0,0171	40,0706	0,0186	39,0708	229	8032	40,0706	16423,01	49666,63
17	(0.46, 0.2,0.34) (0.6, 0.4) (0.45,0.55) (0.11,0.16,0.14,0.08,0.12,0.22,0.08,0.09) (0.61,0.39) (0.53,0.47)	(3,11,12,15,18)	0,6109	0,0161	35,5197	0,0198	44,2252	230	8015	35,5197	16423,01	48144,56
18	(0.29,0.08,0.63) (0.57,0.43) (0.51,0.49) (0.11,0.16,0.21,0.11,0.11,0.11,0.08,0.11) (0.56,0.44) (0.61,0.39)	(3,11,12,15,18)	0,6538	0,0168	38,6748	0,0196	43,3011	228	8008	38,6748	16423,01	50105,52
19	(0.23,0.53,0.24) (0.49,0.51) (0.54,0.46) (0.11,0.14,0.13,0.15,0.14,0.13,0.11,0.09) (0.46,0.54) (0.79,0.21)	(2,13,15,17,18)	0,7268	0,0166	37,7292	0,0169	32,171	230	8035	37,7292	16423,01	46500,96
20	(0.12,0.39,0.49) (0.57,0.43) (0.54,0.46) (0.13,0.11,0.15,0.13,0.12,0.13, 0.1,0.13) (0.63,0.37) (0.61,0.39)	(3,11,12,15,18)	0,6752	0,017	39,9322	0,019	40,7394	229	8017	39,9322	16423,01	48076,84
21	(0.15,0.36,0.49) (0.34,0.66) (0.44,0.56) (0.12,0.11,0.14,0.17,0.08,0.16,0.13,0.09) (0.62,0.38) (0.45,0.55)	(3,12,14,15,18)	0,6132	0,0166	37,7833	0,0228	58,8917	229	8023	37,7833	16423,01	48295,77
	(0.46,0.16,0.38)											

22	(0.9, 0.1) (0.45,0.55) (0.15, 0.1,0.11,0.23,0.13,0.12,0.09,0.07) (0.63,0.37) (0.53,0.47)	(3,11,12,15,18)	0,6102	0,0155	32,918	0,019	40,6707	228	8003	32,918	16423,01	49018,73
23	(0.19,0.26,0.55) (0.28,0.72) (0.41,0.59) (0.13,0.13,0.17,0.12,0.12,0.12,0.11, 0.1) (0.55,0.45) (0.52,0.48)	(3,11,12,15,18)	0,5836	0,0147	29,6107	0,0195	42,958	230	8022	29,6107	16423,01	47921,78
24	(0.16,0.32,0.52) (0.34,0.66) (0.45,0.55) (0.12,0.14,0.11,0.13,0.09,0.12, 0.2,0.09) (0.62,0.38) (0.54,0.46)	(3,11,12,15,18)	0,6115	0,016	35,3154	0,0198	44,5398	230	8007	35,3154	16423,01	47879,3
25	(0.19,0.69,0.12) (0.89,0.11) (0.45,0.55) (0.13,0.06,0.11,0.26,0.06,0.21,0.08,0.09) (0.61,0.39) (0.53,0.47)	(3,11,12,15,18)	0,6109	0,0161	35,5197	0,0198	44,2252	229	8019	35,5197	16423,01	47221,51
26	(0.46,0.48,0.06) (0.23,0.77) (0.53,0.47) (0.14,0.11,0.12,0.11,0.12,0.13,0.11,0.16) (0.61,0.39) (0.53,0.47)	(3,11,12,15,18)	0,6066	0,0159	34,916	0,0191	41,139	231	8020	34,916	16423,01	48463,86
27	(0.47,0.06,0.47) (0.24,0.76) (0.45,0.55) (0.12,0.12,0.19,0.16,0.08,0.14,0.11,0.08) (0.63,0.37) (0.52,0.48)	(3,11,12,15,18)	0,5849	0,0155	32,984	0,0192	41,7531	229	8017	32,984	16423,01	49743,91
28	(0.44, 0.4,0.16) (0.5, 0.5) (0.47,0.53) (0.13, 0.1,0.11,0.09,0.11,0.17,0.17,0.12) (0.6, 0.4) (0.46,0.54)	(11,12,13,15,18)	0,6294	0,0168	38,9089	0,0197	43,8923	230	8030	38,9089	16423,01	48754,55
29	(0.14,0.35,0.51) (0.7, 0.3) (0.57,0.43) (0.16,0.15,0.08,0.11,0.12,0.17,0.11, 0.1) (0.59,0.41) (0.55,0.45)	(3,11,12,15,18)	0,5967	0,0161	35,8473	0,019	40,8319	228	8015	35,8473	16423,01	48055,28
30	(0.15,0.14,0.71) (0.56,0.44) (0.53,0.47) (0.14,0.12,0.11,0.12,0.11,0.17,0.08,0.15) (0.62,0.38) (0.55,0.45)	(3,11,12,15,18)	0,6068	0,0158	34,4817	0,0191	41,1982	230	8033	34,4817	570,821	48791,71

C. Resultados del AG2 usando la granularidad suministrada por los expertos.

Tabla A.C.1.1: Resultados de proporciones de datos (distribución de landmarks) para granularidad (3,2,2,2,2,3). Concentración Local Máxima de Ozono en Mexico usando la función de costo 1-Q (1000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	1-Q	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(0.29,0.45,0.26) (0.32,0.68) (0.25,0.75) (0.13,0.87) (0.74,0.26) (0.86,0.06,0.08)	(6,12,18)	0,8132	0,1868	0,0471	251,1527	28	1015	0,1868	0,4149	5691
2	(0.39,0.17,0.44) (0.45,0.55) (0.49,0.51) (0.72,0.28) (0.39,0.61) (0.09,0.10,0.81)	(12,18)	0,8527	0,1473	0,0313	110,8184	28	1024	0,1473	0,4199	5816
3	(0.40,0.37,0.23) (0.54,0.46) (0.40,0.60) (0.52,0.48) (0.59,0.41) (0.09,0.67,0.24)	(1,11,14,17,18)	0,8196	0,1804	0,018	36,6709	28	1028	0,1804	0,4346	5780
4	(0.30,0.35,0.35) (0.36,0.64) (0.55,0.45) (0.50,0.50) (0.54,0.46) (0.05,0.83,0.12)	(12,17,18)	0,8133	0,1867	0,0629	447,5334	27	1006	0,1867	0,4181	5690
5	(0.61,0.12,0.27) (0.62,0.38) (0.47,0.53) (0.68,0.32) (0.36,0.64) (0.08,0.11,0.81)	-12,18	0,8527	0,1473	0,0313	110,8184	28	1027	0,1473	0,4325	5711
6	(0.50,0.26,0.24) (0.54,0.46) (0.23,0.77) (0.36,0.64) (0.19,0.81) (0.19,0.05,0.76)	(6,12,18)	0,7919	0,2081	NO PREDICE	NO PREDICE	28	1007	0,2081	0,4301	5688
7	(0.34,0.39,0.27) (0.49,0.51) (0.58,0.42) (0.56,0.44) (0.38,0.62) (0.07,0.63,0.30)	(1,4,14,16,18)	0,8247	0,1753	0,0207	48,5185	28	1026	0,1753	0,4274	5804
8	(0.50,0.28,0.22) (0.29,0.71) (0.31,0.69) (0.15,0.85) (0.49,0.51) (0.73,0.06,0.21)	(12,13,18)	0,7848	0,2152	0,0284	91,462	28	1014	0,2152	0,4314	5568
9	(0.19,0.55,0.26) (0.70,0.30) (0.77,0.23) (0.76,0.24) (0.24,0.76) (0.09,0.84,0.07)	(12,16,18)	0,8514	0,1486	0,0459	238,1757	28	1013	0,1486	0,4252	5672
10	(0.18,0.63,0.19) (0.86,0.14) (0.28,0.72) (0.59,0.41) (0.49,0.51) (0.09,0.11,0.80)	(1,12,18)	0,8667	0,1333	0,0427	206,3634	27	1015	0,1333	0,4307	5754

11	(0.33,0.33,0.34) (0.57,0.43) (0.49,0.51) (0.45,0.55) (0.56,0.44) (0.09,0.79,0.12)	(12,17,18)	0,8148	0,1852	0,0668	505,5235	29	1029	0,1852	0,4264	5796
12	(0.25,0.38,0.37) (0.60,0.40) (0.33,0.67) (0.52,0.48) (0.43,0.57) (0.09,0.65,0.26)	(12,16,18)	0,7697	0,2303	0,0445	224,7047	28	1025	0,2303	0,4221	5782
13	(0.46,0.21,0.33) (0.66,0.34) (0.40,0.60) (0.37,0.63) (0.40,0.60) (0.07,0.17,0.76)	(12,18)	0,8527	0,1473	0,0313	110,8184	28	1016	0,1473	0,4394	5755
14	(0.20,0.43,0.37) (0.25,0.75) (0.44,0.56) (0.75,0.25) (0.81,0.19) (0.09,0.53,0.38)	(1,12,18)	0,7690	0,2310	0,0385	167,8436	28	1018	0,2310	0,4180	5707
15	(0.18,0.57,0.25) (0.65,0.35) (0.68,0.32) (0.41,0.59) (0.21,0.79) (0.80,0.10,0.10)	(6,12,18)	0,7785	0,2215	0,0391	173,5242	29	1030	0,2215	0,4304	5815
16	(0.29,0.37,0.34) (0.41,0.59) (0.48,0.52) (0.47,0.53) (0.31,0.69) (0.90,0.05,0.05)	(6,12,18)	0,8528	0,1472	0,0561	357,0514	28	1021	0,1472	0,4247	5731
17	(0.30,0.40,0.30) (0.66,0.34) (0.46,0.54) (0.47,0.53) (0.44,0.56) (0.05,0.86,0.09)	(12,16,18)	0,8370	0,1630	0,0549	341,1239	28	1011	0,1630	0,4153	5706
18	(0.38,0.36,0.26) (0.25,0.75) (0.69,0.31) (0.61,0.39) (0.26,0.74) (0.09,0.69,0.22)	(1,4,14,16,18)	0,8097	0,1903	0,0198	44,5855	28	1017	0,1903	0,4246	5799
19	(0.42,0.22,0.36) (0.39,0.61) (0.20,0.80) (0.49,0.51) (0.43,0.57) (0.08,0.14,0.78)	(12,18)	0,8527	0,1473	0,0313	110,8184	28	1026	0,1473	0,4272	5822
20	(0.30,0.60,0.10) (0.55,0.45) (0.53,0.47) (0.50,0.50) (0.32,0.68) (0.08,0.16,0.76)	(12,18)	0,8527	0,1473	0,0313	110,8184	28	1015	0,1473	0,4195	5768
21	(0.34,0.23,0.43) (0.56,0.44) (0.50,0.50) (0.47,0.53) (0.45,0.55) (0.64,0.06,0.30)	(1,12,18)	0,8079	0,1921	0,0177	35,3699	28	1009	0,1921	0,4345	5596
	(0.07,0.28,0.65)										

22	(0.67,0.33) (0.17,0.83) (0.70,0.30) (0.53,0.47) (0.86,0.08,0.06)	(6,12,18)	0,8102	0,1898	0,0364	150,3505	28	1019	0,1898	0,4236	5667
23	(0.54,0.07,0.39) (0.46,0.54) (0.79,0.21) (0.65,0.35) (0.64,0.36) (0.09,0.62,0.29)	(12,17,18)	0,7734	0,2266	0,0569	366,6187	28	1008	0,2266	0,4230	5628
24	(0.21,0.48,0.31) (0.38,0.62) (0.24,0.76) (0.64,0.36) (0.61,0.39) (0.06,0.18,0.76)	(12,13,18)	0,8573	0,1427	0,016	28,9489	28	1014	0,1427	0,4272	5803
25	(0.37,0.50,0.13) (0.53,0.47) (0.44,0.56) (0.57,0.43) (0.71,0.29) (0.81,0.11,0.08)	(4,12,16,17,18)	0,7818	0,2182	0,0483	263,8239	28	1018	0,2182	0,4247	5601
26	(0.35,0.32,0.33) (0.67,0.33) (0.46,0.54) (0.49,0.51) (0.47,0.53) (0.85,0.05,0.10)	(6,12,18)	0,8096	0,1904	0,0386	168,8036	29	1033	0,1904	0,4300	5801
27	(0.42,0.35,0.23) (0.46,0.54) (0.43,0.57) (0.71,0.29) (0.68,0.32) (0.09,0.60,0.31)	(13,14,16,17,18)	0,8544	0,1456	0,0186	39,0896	28	1008	0,1456	0,4295	5678
28	(0.09,0.41,0.50) (0.67,0.33) (0.57,0.43) (0.32,0.68) (0.83,0.17) (0.09,0.11,0.80)	(12,18)	0,8527	0,1473	0,0313	110,8184	28	1021	0,1473	0,4250	5823
29	(0.26,0.49,0.25) (0.52,0.48) (0.78,0.22) (0.21,0.79) (0.68,0.32) (0.18,0.06,0.76)	(6,7,12,18)	0,8212	0,1788	NO PREDICE	NO PREDICE	28	1017	0,1788	0,4263	5721
30	(0.50,0.36,0.14) (0.25,0.75) (0.55,0.45) (0.59,0.41) (0.63,0.37) (0.82,0.05,0.13)	(6,12,18)	0,7999	0,2001	0,0443	222,5418	28	1026	0,2001	0,4226	5677

Tabla A.C.1.2: Resultados de proporciones de datos (distribución de landmarks) para granularidad (3,2,2,2,2,3). Concentración Local Máxima de Ozono en Mexico usando la función de costo 1-Q (2000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	1-Q	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(0.57,0.17,0.26) (0.47,0.53) (0.88,0.12) (0.52,0.48) (0.65,0.35) (0.09,0.86,0.05)	(5,8,13,17,18)	0,8808	0,1192	0,0175	34,6784	57	2004	0,1192	0,4255	10993
2	(0.18, 0.5,0.32) (0.63,0.37) (0.51,0.49) (0.56,0.44) (0.66,0.34) (0.08,0.16,0.76)	(7,12,18)	0,8597	0,1403	0,0423	202,7117	56	2009	0,1403	0,4213	11469
3	(0.45,0.41,0.14) (0.45,0.55) (0.72,0.28) (0.31,0.69) (0.55,0.45) (0.82,0.05,0.13)	(6,12,18)	0,7999	0,2001	0,0443	222,5418	56	2002	0,2001	0,4439	11039
4	(0.34,0.34,0.32) (0.58,0.42) (0.49,0.51) (0.47,0.53) (0.45,0.55) (0.66,0.05,0.29)	(1,12,18)	0,8307	0,1693	0,0222	55,5966	56	2024	0,1693	0,4334	11312
5	(0.22,0.41,0.37) (0.44,0.56) (0.8, 0.2) (0.68,0.32) (0.24,0.76) (0.09,0.14,0.77)	(12,13,18)	0,8555	0,1445	0,0415	194,5802	56	2001	0,1445	0,4238	11407
6	(0.29,0.31, 0.4) (0.6, 0.4) (0.48,0.52) (0.38,0.62) (0.4, 0.6) (0.06,0.85,0.09)	(12,17,18)	0,8327	0,1673	0,0623	439,1037	57	2020	0,1673	0,4266	11457
7	(0.21,0.19, 0.6) (0.53,0.47) (0.75,0.25) (0.42,0.58) (0.36,0.64) (0.08,0.14,0.78)	(12,13,18)	0,8584	0,1416	0,044	218,8044	56	2025	0,1416	0,4231	11675
8	(0.51,0.09, 0.4) (0.49,0.51) (0.65,0.35) (0.63,0.37) (0.53,0.47) (0.84,0.05,0.11)	(1,12,18)	0,8234	0,1766	0,0194	42,7818	56	2009	0,1766	0,4232	10822
9	(0.36,0.41,0.23) (0.5, 0.5) (0.5, 0.5) (0.53,0.47) (0.39,0.61) (0.05,0.18,0.77)	(12,18)	0,8527	0,1473	0,0313	110,8184	56	2001	0,1473	0,4249	11296
10	(0.29,0.44,0.27) (0.49,0.51) (0.5, 0.5) (0.44,0.56) (0.5, 0.5) (0.07,0.12,0.81)	(12,18)	0,8527	0,1473	0,0313	110,8184	57	2020	0,1473	0,4129	11564

11	(0.31, 0.4,0.29) (0.49,0.51) (0.53,0.47) (0.59,0.41) (0.62,0.38) (0.05, 0.9,0.05)	(12,17,18)	0,8766	0,1234	0,0651	479,8868	57	2006	0,1234	0,4263	11244
12	(0.36,0.26,0.38) (0.53,0.47) (0.74,0.26) (0.22,0.78) (0.2, 0.8) (0.65,0.05, 0.3)	(1,12,18)	0,8257	0,1743	0,0203	46,5346	56	2003	0,1743	0,4284	11159
13	(0.22,0.25,0.53) (0.55,0.45) (0.33,0.67) (0.44,0.56) (0.47,0.53) (0.06,0.16,0.78)	(12,13,18)	0,8550	0,1450	0,0441	219,9307	57	2015	0,1450	0,4394	11548
14	(0.44,0.24,0.32) (0.52,0.48) (0.57,0.43) (0.56,0.44) (0.48,0.52) (0.88,0.07,0.05)	(6,12,18)	0,8337	0,1663	0,0467	246,9089	57	2021	0,1663	0,4271	11185
15	(0.06,0.41,0.53) (0.81,0.19) (0.57,0.43) (0.4, 0.6) (0.72,0.28) (0.17,0.07,0.76)	(6,12,13,18)	0,7934	0,2066	NO PREDICE	NO PREDICE	56	2012	0,2066	0,4234	11431
16	(0.35,0.36,0.29) (0.45,0.55) (0.41,0.59) (0.51,0.49) (0.47,0.53) (0.05,0.88,0.07)	(12,16,18)	0,8548	0,1452	0,0517	302,4938	57	2020	0,1452	0,4154	11316
17	(0.24, 0.4,0.36) (0.48,0.52) (0.53,0.47) (0.34,0.66) (0.45,0.55) (0.08,0.13,0.79)	(12,13,18)	0,8555	0,1445	0,0415	194,5802	57	2023	0,1445	0,4230	11490
18	(0.39, 0.3,0.31) (0.6, 0.4) (0.31,0.69) (0.59,0.41) (0.7, 0.3) (0.09,0.67,0.24)	(1,5,8,17,18)	0,8554	0,1446	0,0181	36,9249	56	2017	0,1446	0,4251	11341
19	(0.24,0.49,0.27) (0.46,0.54) (0.31,0.69) (0.55,0.45) (0.21,0.79) (0.07,0.17,0.76)	(12,13,18)	0,8593	0,1407	0,0423	202,7004	57	2031	0,1407	0,4307	11567
20	(0.35,0.33,0.32) (0.52,0.48) (0.49,0.51) (0.44,0.56) (0.6, 0.4) (0.89,0.06,0.05)	(6,12,18)	0,8429	0,1571	0,0485	266,13	56	2009	0,1571	0,4190	10891
21	(0.37, 0.4,0.23) (0.51,0.49) (0.47,0.53) (0.62,0.38) (0.54,0.46) (0.09,0.14,0.77)	(12,18)	0,8527	0,1473	0,0313	110,8184	57	2030	0,1473	0,4297	11471
	(0.35,0.32,0.33)										

22	(0.51,0.49) (0.57,0.43) (0.49,0.51) (0.68,0.32) (0.05, 0.9,0.05)	(12,17,18)	0,8793	0,1207	0,0659	491,2673	56	2005	0,1207	0,4303	11158
23	(0.38,0.33,0.29) (0.52,0.48) (0.49,0.51) (0.58,0.42) (0.54,0.46) (0.08,0.68,0.24)	(1,10,14,17,18)	0,8395	0,1605	0,0194	42,4136	57	2018	0,1605	0,4271	11338
24	(0.58,0.32, 0.1) (0.82,0.18) (0.54,0.46) (0.24,0.76) (0.53,0.47) (0.85,0.07,0.08)	(6,12,18)	0,8049	0,1951	0,0445	223,914	57	2015	0,1951	0,4230	10904
25	(0.27,0.39,0.34) (0.42,0.58) (0.51,0.49) (0.71,0.29) (0.68,0.32) (0.06,0.86,0.08)	(12,17,18)	0,8561	0,1439	0,0587	390,6523	56	2004	0,1439	0,4368	11264
26	(0.51, 0.2,0.29) (0.41,0.59) (0.26,0.74) (0.5, 0.5) (0.55,0.45) (0.09,0.81, 0.1)	(5,13,14,17,18)	0,8404	0,1596	0,018	36,7639	57	2024	0,1596	0,4208	11376
27	(0.22,0.32,0.46) (0.61,0.39) (0.48,0.52) (0.43,0.57) (0.56,0.44) (0.07,0.17,0.76)	(12,13,18)	0,8540	0,1460	0,0428	207,5973	57	2032	0,1460	0,4276	11614
28	(0.4, 0.3, 0.3) (0.53,0.47) (0.37,0.63) (0.56,0.44) (0.44,0.56) (0.09,0.69,0.22)	(1,4,14,16,18)	0,8399	0,1601	0,0198	44,2256	57	2013	0,1601	0,4229	11211
29	(0.38,0.42, 0.2) (0.65,0.35) (0.38,0.62) (0.43,0.57) (0.8, 0.2) (0.08,0.16,0.76)	(12,18)	0,8527	0,1473	0,0313	110,8184	57	2024	0,1473	0,4120	11452
30	(0.38,0.23,0.39) (0.36,0.64) (0.36,0.64) (0.6, 0.4) (0.59,0.41) (0.09,0.07,0.84)	(12,18)	0,8527	0,1473	0,0313	110,8184	57	2021	0,1473	0,4334	11329

Tabla A.C.1.3: Resultados de proporciones de datos (distribución de landmarks) para granularidad (3,2,2,2,2,3). Concentración Local Máxima de Ozono en Mexico usando la función de costo 1-Q (4000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	1-Q	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(0.19, 0.5,0.31) (0.39,0.61) (0.45,0.55) (0.57,0.43) (0.46,0.54) (0.08,0.16,0.76)	(7,12,18)	0,8597	0,1403	0,0423	202,7117	114	4020	0,1403	0,4212	23161
2	(0.52,0.13,0.35) (0.35,0.65) (0.57,0.43) (0.61,0.39) (0.48,0.52) (0.9,0.05,0.05)	(1,12,18)	0,8562	0,1438	0,0274	85,0461	114	4021	0,1438	0,4337	21407
3	(0.3, 0.4, 0.3) (0.51,0.49) (0.51,0.49) (0.5, 0.5) (0.69,0.31) (0.05,0.88,0.07)	(12,17,18)	0,8639	0,1361	0,0605	414,08	115	4034	0,1361	0,4361	22673
4	(0.35,0.42,0.23) (0.51,0.49) (0.5, 0.5) (0.67,0.33) (0.66,0.34) (0.09,0.14,0.77)	(12,18)	0,8527	0,1473	0,0313	110,8184	116	4032	0,1473	0,4333	22485
5	(0.52,0.42,0.06) (0.47,0.53) (0.23,0.77) (0.4, 0.6) (0.68,0.32) (0.09,0.86,0.05)	(12,17,18)	0,8793	0,1207	0,0659	491,2673	113	4004	0,1207	0,4171	22355
6	(0.49,0.12,0.39) (0.47,0.53) (0.53,0.47) (0.54,0.46) (0.49,0.51) (0.89,0.05,0.06)	(6,12,18)	0,8420	0,1580	0,0428	207,8427	116	4032	0,1580	0,4320	22070
7	(0.24,0.51,0.25) (0.43,0.57) (0.47,0.53) (0.54,0.46) (0.68,0.32) (0.07,0.17,0.76)	(1,12,18)	0,8721	0,1279	0,0439	217,99	114	4037	0,1279	0,4136	22965
8	(0.33,0.33,0.34) (0.12,0.88) (0.38,0.62) (0.59,0.41) (0.36,0.64) (0.06,0.17,0.77)	(12,18)	0,8527	0,1473	0,0313	110,8184	114	4003	0,1473	0,4269	22628
9	(0.34,0.36, 0.3) (0.65,0.35) (0.7, 0.3) (0.51,0.49) (0.6, 0.4) (0.06,0.87,0.07)	(12,17,18)	0,8582	0,1418	0,0678	521,1602	115	4019	0,1418	0,4244	22453
10	(0.41,0.26,0.33) (0.37,0.63) (0.67,0.33) (0.48,0.52) (0.51,0.49) (0.89,0.06,0.05)	(6,12,18)	0,8429	0,1571	0,0485	266,13	114	4035	0,1571	0,4373	21623

11	(0.39,0.39,0.22) (0.43,0.57) (0.25,0.75) (0.39,0.61) (0.52,0.48) (0.05,0.19,0.76)	(12,18)	0,8527	0,1473	0,0313	110,8184	115	4018	0,1473	0,4369	22841
12	(0.53,0.14,0.33) (0.39,0.61) (0.71,0.29) (0.44,0.56) (0.46,0.54) (0.77,0.07,0.16)	(1,12,15,18)	0,8046	0,1954	0,0236	63,2926	115	4006	0,1954	0,4328	21350
13	(0.48,0.39,0.13) (0.29,0.71) (0.46,0.54) (0.55,0.45) (0.29,0.71) (0.89,0.06,0.05)	(6,12,18)	0,8429	0,1571	0,0485	266,13	114	4009	0,1571	0,4285	21455
14	(0.35,0.33,0.32) (0.45,0.55) (0.6, 0.4) (0.51,0.49) (0.48,0.52) (0.09,0.61, 0.3)	1,10,14,17,18	0,8379	0,1621	0,019	41,0967	115	4021	0,1621	0,4256	22792
15	(0.23,0.55,0.22) (0.69,0.31) (0.47,0.53) (0.5, 0.5) (0.48,0.52) (0.06,0.13,0.81)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	115	4020	0,1277	0,4230	22811
16	(0.34,0.39,0.27) (0.57,0.43) (0.41,0.59) (0.43,0.57) (0.39,0.61) (0.07,0.15,0.78)	(12,18)	0,8527	0,1473	0,0313	110,8184	113	4008	0,1473	0,4195	22638
17	(0.26, 0.4,0.34) (0.47,0.53) (0.62,0.38) (0.68,0.32) (0.47,0.53) (0.05, 0.9,0.05)	(12,16,18)	0,8725	0,1275	0,0555	348,7995	115	4022	0,1275	0,4146	22887
18	(0.2,0.47,0.33) (0.55,0.45) (0.45,0.55) (0.48,0.52) (0.52,0.48) (0.09,0.15,0.76)	(7,12,18)	0,8597	0,1403	0,0423	202,7117	115	4027	0,1403	0,4165	23032
19	(0.42,0.36,0.22) (0.51,0.49) (0.56,0.44) (0.6, 0.4) (0.46,0.54) (0.09,0.61, 0.3)	10,13,14,15,18	0,8484	0,1516	0,0196	43,6837	115	4023	0,1516	0,4186	22549
20	(0.39, 0.3,0.31) (0.45,0.55) (0.58,0.42) (0.37,0.63) (0.53,0.47) (0.05,0.89,0.06)	(1,5,14,17,18)	0,8617	0,1383	0,0184	38,1489	114	4003	0,1383	0,4354	22398
21	(0.22,0.68, 0.1) (0.76,0.24) (0.34,0.66) (0.15,0.85) (0.15,0.85) (0.89,0.05,0.06)	(6,12,18)	0,8420	0,1580	0,0428	207,8427	113	4001	0,1580	0,4269	21712
	(0.19,0.53,0.28)										

22	(0.54,0.46) (0.53,0.47) (0.68,0.32) (0.48,0.52) (0.06,0.16,0.78)	(1,12,18)	0,8692	0,1308	0,0427	206,757	115	4017	0,1308	0,4329	22890
23	(0.38,0.34,0.28) (0.44,0.56) (0.49,0.51) (0.69,0.31) (0.45,0.55) (0.64,0.06, 0.3)	(7,12,16,18)	0,8395	0,1605	0,0179	36,2221	114	4012	0,1605	0,4170	21951
24	(0.29,0.51, 0.2) (0.55,0.45) (0.67,0.33) (0.46,0.54) (0.48,0.52) (0.05,0.19,0.76)	(7,12,18)	0,8717	0,1283	0,0439	218,0389	115	4016	0,1283	0,4191	22745
25	(0.28,0.52, 0.2) (0.49,0.51) (0.49,0.51) (0.52,0.48) (0.46,0.54) (0.07,0.17,0.76)	(7,12,18)	0,8717	0,1283	0,0439	218,0389	115	4025	0,1283	0,4354	22888
26	(0.59,0.13,0.28) (0.56,0.44) (0.56,0.44) (0.13,0.87) (0.78,0.22) (0.82,0.05,0.13)	(12,13,18)	0,8176	0,1824	0,0191	41,2879	116	4023	0,1824	0,4255	21630
27	(0.71,0.08,0.21) (0.57,0.43) (0.44,0.56) (0.48,0.52) (0.43,0.57) (0.09,0.15,0.76)	(12,18)	0,8527	0,1473	0,0313	110,8184	114	4032	0,1473	0,4341	22830
28	(0.23,0.38,0.39) (0.24,0.76) (0.8, 0.2) (0.45,0.55) (0.61,0.39) (0.07,0.83, 0.1)	5,14,15,17,18	0,8406	0,1594	0,0205	47,6929	116	4027	0,1594	0,4229	22369
29	(0.46,0.39,0.15) (0.74,0.26) (0.45,0.55) (0.32,0.68) (0.63,0.37) (0.88,0.07,0.05)	(6,12,18)	0,8337	0,1663	0,0467	246,9089	114	4036	0,1663	0,4243	21766
30	(0.39,0.52,0.09) (0.75,0.25) (0.12,0.88) (0.53,0.47) (0.23,0.77) (0.06,0.89,0.05)	(12,16,18)	0,8750	0,1250	0,0497	279,5923	114	4017	0,1250	0,4314	22536

Tabla A.C.1.4: Resultados de proporciones de datos (distribución de landmarks) para granularidad (3,2,2,2,2,3). Concentración Local Máxima de Ozono en Mexico usando la función de costo 1-Q (8000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	1-Q	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(0.23,0.53,0.24) (0.53,0.47) (0.64,0.36) (0.56,0.44) (0.46,0.54) (0.07,0.17,0.76)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	229	8024	0,1277	0,4260	45414
2	(0.23,0.53,0.24) (0.36,0.64) (0.57,0.43) (0.77,0.23) (0.6, 0.4) (0.09,0.13,0.78)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	229	8016	0,1277	0,4229	45355
3	(0.29,0.46,0.25) (0.51,0.49) (0.58,0.42) (0.49,0.51) (0.67,0.33) (0.06,0.89,0.05)	3,13,14,17,18	0,8800	0,1200	0,0193	42,1282	232	8023	0,1200	0,4142	44588
4	(0.23,0.54,0.23) (0.47,0.53) (0.5, 0.5) (0.54,0.46) (0.5, 0.5) (0.09,0.14,0.77)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	228	8013	0,1277	0,4322	45620
5	(0.23,0.18,0.59) (0.39,0.61) (0.32,0.68) (0.43,0.57) (0.34,0.66) (0.09,0.13,0.78)	(12,13,18)	0,8584	0,1416	0,044	218,8044	229	8024	0,1416	0,4266	44353
6	(0.51,0.23,0.26) (0.18,0.82) (0.49,0.51) (0.46,0.54) (0.64,0.36) (0.07,0.88,0.05)	(5,7,14,17,18)	0,8911	0,1089	0,0176	35,0867	230	8012	0,1089	0,4322	44325
7	(0.45,0.28,0.27) (0.46,0.54) (0.38,0.62) (0.75,0.25) (0.74,0.26) (0.09,0.68,0.23)	(5,7,14,17,18)	0,8696	0,1304	0,0183	37,8475	229	8008	0,1304	0,4248	44278
8	(0.24,0.53,0.23) (0.42,0.58) (0.55,0.45) (0.33,0.67) (0.51,0.49) (0.09,0.15,0.76)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	229	8019	0,1277	0,4203	45927
9	(0.23,0.53,0.24) (0.48,0.52) (0.52,0.48) (0.48,0.52) (0.53,0.47) (0.08,0.15,0.77)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	230	8023	0,1277	0,4364	45655
10	(0.23,0.53,0.24) (0.23,0.77) (0.49,0.51) (0.49,0.51) (0.49,0.51) (0.08,0.15,0.77)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	228	8013	0,1277	0,4207	45394

11	(0.21,0.28,0.51) (0.39,0.61) (0.52,0.48) (0.51,0.49) (0.6, 0.4) (0.09,0.09,0.82)	(12,13,18)	0,8550	0,1450	0,0441	219,9307	228	8030	0,1450	0,4219	43990
12	(0.29,0.51, 0.2) (0.53,0.47) (0.84,0.16) (0.58,0.42) (0.54,0.46) (0.07,0.15,0.78)	(7,12,18)	0,8717	0,1283	0,0439	218,0389	229	8025	0,1283	0,4301	45759
13	(0.56, 0.2,0.24) (0.18,0.82) (0.28,0.72) (0.07,0.93) (0.6, 0.4) (0.08,0.87,0.05)	1,13,14,17,18	0,8906	0,1094	0,0178	35,969	228	8006	0,1094	0,4217	44182
14	(0.27,0.48,0.25) (0.52,0.48) (0.56,0.44) (0.46,0.54) (0.65,0.35) (0.08,0.87,0.05)	(2,3,13,17,18)	0,8801	0,1199	0,0176	35,2628	228	8022	0,1199	0,4254	44456
15	(0.43,0.29,0.28) (0.46,0.54) (0.53,0.47) (0.48,0.52) (0.74,0.26) (0.07, 0.7,0.23)	(5,7,14,17,18)	0,8696	0,1304	0,0183	37,8475	229	8021	0,1304	0,4339	44379
16	(0.34,0.34,0.32) (0.52,0.48) (0.81,0.19) (0.53,0.47) (0.26,0.74) (0.9,0.05,0.05)	(3,12,15,18)	0,8553	0,1447	0,0197	43,8297	228	8034	0,1447	0,4269	42513
17	(0.24,0.52,0.24) (0.73,0.27) (0.52,0.48) (0.48,0.52) (0.51,0.49) (0.09,0.09,0.82)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	230	8031	0,1277	0,4323	44157
18	(0.23,0.54,0.23) (0.48,0.52) (0.52,0.48) (0.62,0.38) (0.49,0.51) (0.07,0.15,0.78)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	230	8013	0,1277	0,4312	45567
19	(0.55,0.11,0.34) (0.37,0.63) (0.44,0.56) (0.54,0.46) (0.42,0.58) (0.89,0.06,0.05)	(1,12,18)	0,8501	0,1499	0,0179	36,1348	230	8014	0,1499	0,4353	42867
20	(0.39,0.33,0.28) (0.58,0.42) (0.84,0.16) (0.59,0.41) (0.83,0.17) (0.64,0.06, 0.3)	(7,12,17,18)	0,8458	0,1542	0,019	40,8482	229	8023	0,1542	0,4239	43054
21	(0.22,0.55,0.23) (0.48,0.52) (0.46,0.54) (0.49,0.51) (0.66,0.34) (0.09,0.14,0.77)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	229	8002	0,1277	0,4357	45257
	(0.33,0.41,0.26)										

22	(0.46,0.54) (0.7, 0.3) (0.56,0.44) (0.44,0.56) (0.05,0.19,0.76)	(12,18)	0,8527	0,1473	0,0313	110,8184	229	8004	0,1473	0,4301	45227
23	(0.22,0.54,0.24) (0.46,0.54) (0.74,0.26) (0.58,0.42) (0.29,0.71) (0.09,0.11, 0.8)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	229	8031	0,1277	0,4191	45061
24	(0.41,0.32,0.27) (0.41,0.59) (0.49,0.51) (0.64,0.36) (0.54,0.46) (0.65,0.05, 0.3)	(7,12,16,18)	0,8499	0,1501	0,0187	39,5283	230	8010	0,1501	0,4375	45276
25	(0.51,0.27,0.22) (0.2, 0.8) (0.44,0.56) (0.51,0.49) (0.67,0.33) (0.08,0.87,0.05)	(5,7,14,17,18)	0,8873	0,1127	0,0178	35,8551	229	8012	0,1127	0,4339	45386
26	(0.6,0.09,0.31) (0.36,0.64) (0.83,0.17) (0.55,0.45) (0.54,0.46) (0.88,0.07,0.05)	(7,12,15,18)	0,8516	0,1484	0,0215	52,4481	228	8008	0,1484	0,4288	43699
27	(0.32,0.46,0.22) (0.52,0.48) (0.8, 0.2) (0.3, 0.7) (0.68,0.32) (0.89,0.06,0.05)	(12,15,17,18)	0,8494	0,1506	0,0406	186,2553	231	8009	0,1506	0,4169	43389
28	(0.34,0.38,0.28) (0.19,0.81) (0.8, 0.2) (0.79,0.21) (0.95,0.05) (0.9,0.05,0.05)	(3,12,15,18)	0,8547	0,1453	0,0202	46,1047	230	8005	0,1453	0,4186	43083
29	(0.24,0.53,0.23) (0.46,0.54) (0.53,0.47) (0.6, 0.4) (0.53,0.47) (0.08,0.16,0.76)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	229	8017	0,1277	0,4223	45731
30	(0.55,0.22,0.23) (0.25,0.75) (0.68,0.32) (0.42,0.58) (0.63,0.37) (0.09,0.86,0.05)	5,13,14,17,18	0,8884	0,1116	0,0178	36,0716	229	8010	0,1116	0,4187	44064

Tabla A.C.2.1: Resultados de proporciones de datos (distribución de landmarks) para la granularidad (3,2,2,2,2,3). Concentración Local Máxima de Ozono en Mexico el error de predicción del último 25% de datos del conjunto de datos de training como función de costo (FCMSEtrain) (1000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	FCRMStrain (%)	FCMSEtrain (%)	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(0.36,0.34, 0.3) (0.53,0.47) (0.18,0.82) (0.6, 0.4) (0.46,0.54) (0.59,0.22,0.19)	(4,7,12,16,18)	0,6697	0,0165	37,4827	0,019	40,7708	28	1020	37,4827	506,9900	4838
2	(0.38,0.32, 0.3) (0.56,0.44) (0.44,0.56) (0.49,0.51) (0.45,0.55) (0.36,0.25,0.39)	(12,13,14,16,18)	0,6906	0,0167	38,2593	0,0206	48,14	28	1033	38,2593	313,8833	4754
3	(0.09,0.46,0.45) (0.28,0.72) (0.49,0.51) (0.47,0.53) (0.72,0.28) (0.05,0.56,0.39)	(3,11,12,15,18)	0,6603	0,0172	40,5562	0,0207	48,3115	28	1007	40,5562	244,9022	4700
4	(0.51,0.07,0.42) (0.3, 0.7) (0.51,0.49) (0.25,0.75) (0.42,0.58) (0.3,0.16,0.54)	(3,12,15,18)	0,6020	0,0158	34,2675	0,0214	52,0173	27	1005	34,2675	506,4873	4733
5	(0.36,0.36,0.28) (0.54,0.46) (0.37,0.63) (0.55,0.45) (0.41,0.59) (0.38,0.43,0.19)	(4,7,12,16,18)	0,6199	0,0162	35,9551	0,0175	34,5047	28	1018	35,9551	315,3757	4751
6	(0.4,0.34,0.26) (0.54,0.46) (0.55,0.45) (0.49,0.51) (0.47,0.53) (0.4,0.21,0.39)	(12,13,14,16,18)	0,7078	0,0173	40,9825	0,0205	47,3858	27	1006	40,9825	578,8892	4748
7	(0.25,0.55, 0.2) (0.66,0.34) (0.35,0.65) (0.82,0.18) (0.63,0.37) (0.28,0.21,0.51)	(12,13,14,17,18)	0,6379	0,0173	41,0791	0,0226	57,5959	28	1006	41,0791	397,9108	4666
8	(0.35,0.34,0.31) (0.51,0.49) (0.48,0.52) (0.51,0.49) (0.45,0.55) (0.37,0.45,0.18)	(4,7,12,16,18)	0,6226	0,0158	34,4754	0,0191	41,5019	28	1014	34,4754	303,8341	4773
9	(0.34,0.56, 0.1) (0.51,0.49) (0.68,0.32) (0.3, 0.7) (0.4, 0.6) (0.42,0.15,0.43)	(6,7,12,18)	0,6199	0,0164	37,1592	0,023	59,7275	28	1017	37,1592	482,7150	4693
10	(0.35,0.46,0.19) (0.16,0.84) (0.79,0.21) (0.44,0.56) (0.6, 0.4) (0.36,0.25,0.39)	(12,13,17,18)	0,6726	0,0174	41,5399	0,0212	50,8809	27	1001	41,5399	446,7334	4649

11	(0.16,0.28,0.56) (0.85,0.15) (0.43,0.57) (0.46,0.54) (0.89,0.11) (0.09,0.41, 0.5)	(3,12,15,18)	0,5636	0,0147	29,6646	0,0223	56,3795	28	1018	29,6646	445,8299	4697
12	(0.38, 0.3,0.32) (0.5, 0.5) (0.46,0.54) (0.58,0.42) (0.57,0.43) (0.34,0.26, 0.4)	(12,13,14,17,18)	0,6876	0,0175	41,7994	0,0186	39,0529	28	1023	41,7994	455,2351	4721
13	(0.35,0.37,0.28) (0.52,0.48) (0.77,0.23) (0.63,0.37) (0.56,0.44) (0.45,0.35, 0.2)	(4,7,12,16,18)	0,6187	0,016	35,4493	0,0185	38,9227	27	1002	35,4493	369,6442	4597
14	(0.39,0.39,0.22) (0.32,0.68) (0.53,0.47) (0.51,0.49) (0.5, 0.5) (0.42, 0.2,0.38)	(4,12,13,16,18)	0,6902	0,0171	40,1035	0,0178	35,7029	28	1024	40,1035	406,0991	4832
15	(0.33,0.31,0.36) (0.46,0.54) (0.43,0.57) (0.55,0.45) (0.54,0.46) (0.38,0.27,0.35)	(1,12,18)	0,7051	0,0176	42,6953	0,0224	56,9911	28	1008	42,6953	296,6175	4737
16	(0.36,0.36,0.28) (0.61,0.39) (0.44,0.56) (0.57,0.43) (0.53,0.47) (0.46,0.35,0.19)	(4,7,12,16,18)	0,6101	0,0163	36,4584	0,0183	37,9205	28	1031	36,4584	354,5953	4793
17	(0.4,0.32,0.28) (0.64,0.36) (0.77,0.23) (0.46,0.54) (0.61,0.39) (0.29,0.24,0.47)	(8,12,13,17,18)	0,6443	0,0165	37,4077	0,0167	31,5999	28	1021	37,4077	445,8299	4713
18	(0.08, 0.4,0.52) (0.15,0.85) (0.47,0.53) (0.63,0.37) (0.83,0.17) (0.07,0.35,0.58)	(3,12,15,16,18)	0,5919	0,0163	36,5496	0,0188	40,1825	28	1026	36,5496	381,9694	4815
19	(0.41,0.28,0.31) (0.49,0.51) (0.43,0.57) (0.5, 0.5) (0.5, 0.5) (0.4,0.24,0.36)	(8,12,13,17,18)	0,7050	0,0168	38,7533	0,0185	38,6398	27	1001	38,7533	374,4524	4635
20	(0.36,0.43,0.21) (0.58,0.42) (0.43,0.57) (0.46,0.54) (0.6, 0.4) (0.31,0.22,0.47)	(7,8,12,17,18)	0,6548	0,0163	36,1851	0,0164	30,459	28	1032	36,1851	239,9694	4792
21	(0.35,0.31,0.34) (0.42,0.58) (0.51,0.49) (0.55,0.45) (0.54,0.46) (0.43,0.36,0.21)	(7,10,12,16,18)	0,6107	0,0162	36,0194	0,0199	44,8093	28	1016	36,0194	624,0246	4696
	(0.38, 0.3,0.32)											

22	(0.53,0.47) (0.49,0.51) (0.5, 0.5) (0.4, 0.6) (0.4,0.21,0.39)	(12,13,14,16,18)	0,6983	0,0169	38,9158	0,0204	46,961	27	1015	38,9158	573,7420	4718
23	(0.38,0.39,0.23) (0.49,0.51) (0.53,0.47) (0.59,0.41) (0.53,0.47) (0.34,0.29,0.37)	(8,12,13,17,18)	0,7167	0,0171	39,8818	0,0177	35,4365	28	1020	39,8818	573,7420	4648
24	(0.36,0.37,0.27) (0.5, 0.5) (0.52,0.48) (0.57,0.43) (0.48,0.52) (0.38,0.25,0.37)	(7,8,12,17,18)	0,7207	0,0169	39,2272	0,0177	35,2806	28	1017	39,2272	310,6142	4655
25	(0.38,0.29,0.33) (0.49,0.51) (0.56,0.44) (0.55,0.45) (0.48,0.52) (0.38,0.25,0.37)	(8,12,13,17,18)	0,7048	0,0166	37,8519	0,0183	37,7807	28	1031	37,8519	573,7420	4680
26	(0.32,0.44,0.24) (0.49,0.51) (0.56,0.44) (0.5, 0.5) (0.6, 0.4) (0.35,0.28,0.37)	(8,12,13,17,18)	0,6831	0,0166	37,6602	0,0177	35,6342	28	1034	37,6602	547,0320	4720
27	(0.37,0.39,0.24) (0.6, 0.4) (0.06,0.94) (0.56,0.44) (0.6, 0.4) (0.33,0.23,0.44)	(7,8,12,17,18)	0,6626	0,0166	37,5434	0,017	32,8662	28	1021	37,5434	372,0703	4653
28	(0.47,0.24,0.29) (0.79,0.21) (0.47,0.53) (0.5, 0.5) (0.67,0.33) (0.36,0.27,0.37)	(3,11,12,15,18)	0,6120	0,0158	34,2750	0,0186	39,234	28	1023	34,2750	340,9979	4662
29	(0.43,0.25,0.32) (0.74,0.26) (0.51,0.49) (0.69,0.31) (0.76,0.24) (0.3,0.16,0.54)	(3,12,15,18)	0,6020	0,0158	34,2675	0,0214	52,0173	28	1027	34,2675	335,4989	4649
30	(0.34,0.32,0.34) (0.54,0.46) (0.46,0.54) (0.5, 0.5) (0.49,0.51) (0.36,0.25,0.39)	(7,12,14,16,18)	0,6914	0,0174	41,3620	0,0207	48,4949	28	1029	41,3620	563,2338	4740

Tabla A.C.2.2: Resultados de proporciones de datos (distribución de landmarks) para la granularidad (3,2,2,2,2,3). Concentración Local Máxima de Ozono en Mexico el error de predicción del último 25% de datos del conjunto de datos de training como función de costo (FCMSEtrain) (2000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	FCRMStrain (%)	FCMSEtrain (%)	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(0.41,0.34,0.25) (0.42,0.58) (0.51,0.49) (0.57,0.43) (0.47,0.53) (0.39,0.28,0.33)	(4,12,13,16,18)	0,7057	0,0165	37,5814	0,0174	34,4796	56	2031	37,5814	728,4222	9483
2	(0.25,0.51,0.24) (0.58,0.42) (0.45,0.55) (0.47,0.53) (0.61,0.39) (0.31,0.24,0.45)	(12,13,14,17,18)	0,6417	0,0173	40,9788	0,0225	57,169	56	2005	40,9788	370,5550	9128
3	(0.39,0.34,0.27) (0.5, 0.5) (0.48,0.52) (0.48,0.52) (0.5, 0.5) (0.4,0.23,0.37)	(8,12,13,17,18)	0,7132	0,0167	38,0953	0,0188	39,9053	57	2017	38,0953	514,5313	9425
4	(0.4,0.36,0.24) (0.64,0.36) (0.63,0.37) (0.57,0.43) (0.48,0.52) (0.46,0.36,0.18)	(4,12,13,16,18)	0,6090	0,0154	32,7024	0,0185	38,8769	57	2031	32,7024	507,7037	9305
5	(0.39,0.35,0.26) (0.56,0.44) (0.48,0.52) (0.4, 0.6) (0.61,0.39) (0.37,0.27,0.36)	(12,13,14,17,18)	0,7139	0,0162	36,0323	0,0183	37,8848	56	2004	36,0323	511,7325	9070
6	(0.36,0.33,0.31) (0.61,0.39) (0.53,0.47) (0.59,0.41) (0.5, 0.5) (0.57,0.26,0.17)	(4,7,12,16,18)	0,6510	0,0164	37,1499	0,0184	38,2761	57	2031	37,1499	402,5546	9498
7	(0.39, 0.3,0.31) (0.57,0.43) (0.52,0.48) (0.48,0.52) (0.47,0.53) (0.36,0.25,0.39)	(12,13,14,16,18)	0,6905	0,0165	37,5004	0,0201	45,5803	56	2018	37,5004	619,8333	9155
8	(0.38, 0.3,0.32) (0.55,0.45) (0.43,0.57) (0.49,0.51) (0.4, 0.6) (0.35,0.26,0.39)	(12,13,14,16,18)	0,6906	0,0167	38,2593	0,0206	48,14	57	2034	38,2593	582,2424	9189
9	(0.4,0.36,0.24) (0.54,0.46) (0.6, 0.4) (0.55,0.45) (0.47,0.53) (0.42,0.21,0.37)	(12,13,14,16,18)	0,7031	0,017	39,5773	0,0194	42,6003	57	2007	39,5773	408,4366	9139
10	(0.39,0.28,0.33) (0.57,0.43) (0.47,0.53) (0.48,0.52) (0.47,0.53) (0.37,0.24,0.39)	(12,13,14,16,18)	0,6905	0,0165	37,5004	0,0201	45,5803	58	2033	37,5004	429,7849	9209

11	(0.36,0.42,0.22) (0.54,0.46) (0.6, 0.4) (0.56,0.44) (0.5, 0.5) (0.58,0.23,0.19)	(4,12,13,16,18)	0,6346	0,0164	37,0097	0,0184	38,3275	56	2003	37,0097	308,7194	9159
12	(0.35, 0.4,0.25) (0.49,0.51) (0.58,0.42) (0.55,0.45) (0.5, 0.5) (0.41,0.23,0.36)	(7,8,12,17,18)	0,7057	0,0165	37,3764	0,0176	35,1214	57	2006	37,3764	405,8121	9107
13	(0.38,0.29,0.33) (0.5, 0.5) (0.48,0.52) (0.36,0.64) (0.48,0.52) (0.35,0.28,0.37)	(8,12,13,17,18)	0,6962	0,0169	38,9516	0,0181	37,2322	57	2034	38,9516	517,2867	9300
14	(0.39, 0.3,0.31) (0.55,0.45) (0.76,0.24) (0.56,0.44) (0.39,0.61) (0.36,0.22,0.42)	(12,13,14,16,18)	0,6788	0,0169	39,2614	0,0196	43,3043	57	2036	39,2614	618,1556	9219
15	(0.4,0.27,0.33) (0.53,0.47) (0.41,0.59) (0.5, 0.5) (0.52,0.48) (0.42, 0.2,0.38)	(12,13,14,16,18)	0,6736	0,0168	38,6383	0,0197	43,9828	56	2004	38,6383	248,0532	9033
16	(0.57,0.16,0.27) (0.44,0.56) (0.43,0.57) (0.23,0.77) (0.67,0.33) (0.42,0.21,0.37)	(3,11,12,15,18)	0,6072	0,0158	34,5614	0,0188	39,9157	56	2004	34,5614	385,4064	9405
17	(0.39,0.38,0.23) (0.5, 0.5) (0.44,0.56) (0.74,0.26) (0.5, 0.5) (0.41,0.21,0.38)	(8,12,13,17,18)	0,7177	0,0166	37,9260	0,018	36,7014	57	2022	37,9260	757,2192	9205
18	(0.36,0.35,0.29) (0.59,0.41) (0.55,0.45) (0.56,0.44) (0.46,0.54) (0.4,0.41,0.19)	(4,7,12,16,18)	0,6207	0,0159	34,8195	0,0179	36,4633	56	2002	34,8195	573,7420	9309
19	(0.39,0.36,0.25) (0.5, 0.5) (0.43,0.57) (0.48,0.52) (0.6, 0.4) (0.34,0.29,0.37)	(12,13,14,17,18)	0,7185	0,0167	38,3717	0,0183	37,9194	56	2016	38,3717	324,4540	9262
20	(0.25, 0.5,0.25) (0.57,0.43) (0.65,0.35) (0.47,0.53) (0.6, 0.4) (0.25,0.29,0.46)	(12,13,14,17,18)	0,6385	0,0173	41,0183	0,0216	52,9202	56	2002	41,0183	598,4021	9199
21	(0.39,0.28,0.33) (0.55,0.45) (0.64,0.36) (0.49,0.51) (0.34,0.66) (0.34,0.27,0.39)	(12,13,14,16,18)	0,6906	0,0167	38,2593	0,0206	48,14	56	2013	38,2593	353,7062	9250
	(0.38,0.28,0.34)											

22	(0.5, 0.5) (0.47,0.53) (0.53,0.47) (0.48,0.52) (0.35,0.28,0.37)	(8,12,13,17,18)	0,6890	0,0168	38,7595	0,0199	45,011	57	2016	38,7595	573,7420	9204
23	(0.38,0.33,0.29) (0.53,0.47) (0.47,0.53) (0.37,0.63) (0.44,0.56) (0.34,0.29,0.37)	(12,13,14,17,18)	0,7041	0,0164	36,7601	0,0188	40,0844	57	2036	36,7601	485,6218	9378
24	(0.41,0.28,0.31) (0.55,0.45) (0.47,0.53) (0.48,0.52) (0.44,0.56) (0.34,0.27,0.39)	(12,13,14,16,18)	0,6904	0,0167	38,3074	0,0209	49,5871	57	2028	38,3074	384,3104	9417
25	(0.43,0.33,0.24) (0.2, 0.8) (0.51,0.49) (0.48,0.52) (0.2, 0.8) (0.29,0.16,0.55)	(3,12,15,18)	0,6020	0,0158	34,2675	0,0214	52,0173	57	2026	34,2675	487,2098	9287
26	(0.18,0.46,0.36) (0.48,0.52) (0.42,0.58) (0.41,0.59) (0.45,0.55) (0.27,0.19,0.54)	(7,12,15,16,18)	0,6295	0,0167	38,5858	0,0187	39,7887	57	2029	38,5858	370,5251	9425
27	(0.38,0.29,0.33) (0.52,0.48) (0.5, 0.5) (0.57,0.43) (0.55,0.45) (0.39,0.25,0.36)	(12,13,14,17,18)	0,7181	0,0168	38,7207	0,019	40,8676	56	2009	38,7207	542,6615	9268
28	(0.25,0.55, 0.2) (0.52,0.48) (0.55,0.45) (0.52,0.48) (0.58,0.42) (0.34,0.21,0.45)	(12,13,14,17,18)	0,6475	0,0169	39,0237	0,0198	44,2596	57	2032	39,0237	342,8411	9252
29	(0.38,0.28,0.34) (0.5, 0.5) (0.41,0.59) (0.57,0.43) (0.48,0.52) (0.35,0.28,0.37)	(8,12,13,17,18)	0,6890	0,0168	38,7595	0,0199	45,011	57	2019	38,7595	324,2912	9252
30	(0.39,0.28,0.33) (0.51,0.49) (0.26,0.74) (0.52,0.48) (0.4, 0.6) (0.41, 0.4,0.19)	(10,12,13,16,18)	0,6178	0,0161	35,8856	0,0208	49,1764	56	2001	35,8856	334,8743	9246

Tabla A.C.2.3: Resultados de proporciones de datos (distribución de landmarks) para la granularidad (3,2,2,2,2,3). Concentración Local Máxima de Ozono en Mexico el error de predicción del último 25% de datos del conjunto de datos de training como función de costo (FCMSEtrain) (4000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	FCRMStrain (%)	FCMSEtrain (%)	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(0.38,0.42, 0.2) (0.5, 0.5) (0.49,0.51) (0.22,0.78) (0.48,0.52) (0.38,0.25,0.37)	(8,12,13,17,18)	0,7083	0,0163	36,5456	0,0188	39,8265	115	4020	36,5456	314,0539	18123
2	(0.4, 0.3, 0.3) (0.57,0.43) (0.5, 0.5) (0.48,0.52) (0.47,0.53) (0.36,0.25,0.39)	(12,13,14,16,18)	0,6905	0,0165	37,5004	0,0201	45,5803	114	4034	37,5004	277,6614	18269
3	(0.31,0.44,0.25) (0.49,0.51) (0.77,0.23) (0.22,0.78) (0.52,0.48) (0.36,0.27,0.37)	(8,12,13,17,18)	0,6796	0,0165	37,3315	0,018	36,4966	112	4011	37,3315	406,7906	18507
4	(0.38,0.31,0.31) (0.51,0.49) (0.67,0.33) (0.54,0.46) (0.51,0.49) (0.44,0.35,0.21)	(10,12,13,16,18)	0,6085	0,0154	32,7389	0,0201	45,8759	114	4016	32,7389	1118,1506	18410
5	(0.38,0.31,0.31) (0.5, 0.5) (0.51,0.49) (0.52,0.48) (0.48,0.52) (0.38,0.26,0.36)	(8,12,13,17,18)	0,7052	0,0166	37,5331	0,0182	37,6763	114	4036	37,5331	323,4270	18120
6	(0.38,0.38,0.24) (0.57,0.43) (0.48,0.52) (0.59,0.41) (0.34,0.66) (0.5,0.29,0.21)	(4,12,13,16,18)	0,6120	0,016	35,3030	0,0175	34,6806	114	4003	35,3030	573,7420	18069
7	(0.39,0.28,0.33) (0.53,0.47) (0.42,0.58) (0.62,0.38) (0.47,0.53) (0.42,0.23,0.35)	(12,13,14,16,18)	0,6825	0,0165	37,5088	0,0199	44,9175	115	4029	37,5088	343,8486	18023
8	(0.38,0.34,0.28) (0.48,0.52) (0.33,0.67) (0.57,0.43) (0.49,0.51) (0.46, 0.4,0.14)	(4,12,13,16,18)	0,6048	0,0154	32,6062	0,0184	38,4271	114	4014	32,6062	333,3007	18414
9	(0.37,0.33, 0.3) (0.59,0.41) (0.49,0.51) (0.48,0.52) (0.6, 0.4) (0.33,0.23,0.44)	(7,8,12,17,18)	0,6532	0,0167	38,0312	0,0172	33,5995	113	4006	38,0312	447,9714	18031
10	(0.38,0.29,0.33) (0.55,0.45) (0.73,0.27) (0.5, 0.5) (0.65,0.35) (0.35,0.26,0.39)	(12,13,14,16,18)	0,6912	0,0167	38,2959	0,0206	47,9824	113	4009	38,2959	573,7420	18482

11	(0.36,0.32,0.32) (0.65,0.35) (0.76,0.24) (0.58,0.42) (0.89,0.11) (0.57,0.29,0.14)	(4,7,12,16,18)	0,6397	0,0156	33,4943	0,017	32,808	114	4014	33,4943	568,9373	17901
12	(0.38,0.32, 0.3) (0.5, 0.5) (0.43,0.57) (0.55,0.45) (0.61,0.39) (0.35,0.28,0.37)	(12,13,14,17,18)	0,7037	0,0166	37,6949	0,0187	39,5121	114	4032	37,6949	506,9900	18318
13	(0.4,0.37,0.23) (0.47,0.53) (0.5, 0.5) (0.57,0.43) (0.53,0.47) (0.51, 0.3,0.19)	(4,12,13,16,18)	0,6085	0,0157	33,7256	0,0175	34,7184	114	4011	33,7256	496,5247	18459
14	(0.45,0.28,0.27) (0.52,0.48) (0.52,0.48) (0.55,0.45) (0.51,0.49) (0.74,0.05,0.21)	(7,10,14,16,18)	0,7879	0,0162	35,9910	0,0197	43,8041	114	4028	35,9910	573,7420	18479
15	(0.15,0.33,0.52) (0.4, 0.6) (0.33,0.67) (0.27,0.73) (0.5, 0.5) (0.29,0.23,0.48)	(3,12,15,18)	0,5664	0,0168	39,1063	0,0207	48,7454	115	4019	39,1063	371,2001	18526
16	(0.46,0.47,0.07) (0.71,0.29) (0.53,0.47) (0.21,0.79) (0.79,0.21) (0.09,0.41, 0.5)	(3,12,15,18)	0,5598	0,0156	33,6880	0,0216	52,8482	113	4015	33,6880	573,7420	18359
17	(0.48, 0.2,0.32) (0.71,0.29) (0.53,0.47) (0.58,0.42) (0.91,0.09) (0.09, 0.4,0.51)	(3,12,15,18)	0,5598	0,0156	33,6880	0,0216	52,8482	114	4024	33,6880	573,7420	18696
18	(0.38,0.32, 0.3) (0.71,0.29) (0.52,0.48) (0.54,0.46) (0.51,0.49) (0.44,0.35,0.21)	(10,12,13,16,18)	0,6085	0,0154	32,7389	0,0201	45,8759	115	4033	32,7389	303,1290	18134
19	(0.54,0.23,0.23) (0.66,0.34) (0.42,0.58) (0.7, 0.3) (0.35,0.65) (0.35,0.21,0.44)	(3,12,15,16,18)	0,5891	0,0156	33,3707	0,0194	42,7416	114	4006	33,3707	411,5502	18909
20	(0.38, 0.4,0.22) (0.57,0.43) (0.44,0.56) (0.72,0.28) (0.6, 0.4) (0.3,0.27,0.43)	(8,12,13,17,18)	0,6638	0,016	35,1395	0,0168	31,8167	114	4022	35,1395	445,8299	18024
21	(0.38,0.31,0.31) (0.49,0.51) (0.46,0.54) (0.61,0.39) (0.61,0.39) (0.37,0.26,0.37)	(12,13,14,17,18)	0,7037	0,0166	37,6949	0,0187	39,5121	114	4019	37,6949	393,0926	17971
	(0.39,0.29,0.32)											

22	(0.59,0.41) (0.54,0.46) (0.54,0.46) (0.43,0.57) (0.45,0.34,0.21)	(10,12,13,16,18)	0,6085	0,0154	32,7389	0,0201	45,8759	115	4009	32,7389	563,8721	18623
23	(0.39, 0.3,0.31) (0.56,0.44) (0.46,0.54) (0.34,0.66) (0.61,0.39) (0.34, 0.3,0.36)	(12,13,14,17,18)	0,7052	0,0166	37,7595	0,0182	37,5758	113	4017	37,7595	576,2863	18201
24	(0.39,0.29,0.32) (0.47,0.53) (0.46,0.54) (0.54,0.46) (0.17,0.83) (0.44,0.35,0.21)	(10,12,13,16,18)	0,6085	0,0154	32,7389	0,0201	45,8759	114	4016	32,7389	636,0634	18547
25	(0.23,0.57, 0.2) (0.59,0.41) (0.6, 0.4) (0.47,0.53) (0.6, 0.4) (0.3,0.22,0.48)	(12,13,14,17,18)	0,6274	0,0161	35,5124	0,0212	51,0609	114	4005	35,5124	350,7276	18411
26	(0.33,0.34,0.33) (0.52,0.48) (0.51,0.49) (0.65,0.35) (0.49,0.51) (0.44,0.36, 0.2)	(1,4,12,16,18)	0,6188	0,0159	35,0071	0,0182	37,5124	113	4007	35,0071	575,1050	18267
27	(0.39,0.29,0.32) (0.5, 0.5) (0.48,0.52) (0.69,0.31) (0.61,0.39) (0.36,0.27,0.37)	(12,13,14,17,18)	0,7037	0,0166	37,6949	0,0187	39,5121	113	4014	37,6949	364,0392	18258
28	(0.37,0.28,0.35) (0.43,0.57) (0.61,0.39) (0.6, 0.4) (0.44,0.56) (0.45, 0.3,0.25)	(7,12,14,16,18)	0,6137	0,0165	37,5048	0,0214	51,9422	115	4025	37,5048	301,4635	18393
29	(0.46, 0.2,0.34) (0.94,0.06) (0.39,0.61) (0.74,0.26) (0.51,0.49) (0.31,0.29, 0.4)	(3,12,15,16,18)	0,5933	0,0168	38,8078	0,0191	41,1548	114	4020	38,8078	573,7420	19298
30	(0.39, 0.3,0.31) (0.56,0.44) (0.55,0.45) (0.5, 0.5) (0.56,0.44) (0.37,0.24,0.39)	(12,13,14,16,18)	0,6912	0,0167	38,2959	0,0206	47,9824	114	4030	38,2959	385,8911	18167

Tabla A.C.1.4: Resultados de proporciones de datos (distribución de landmarks) para granularidad (3,2,2,2,2,3). Concentración Local Máxima de Ozono en Mexico usando la función de costo 1-Q (8000 evaluaciones). Mes Enero

# Ejec.	Proporción de los datos	Opt. Mask	Q	1-Q	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(0.23,0.53,0.24) (0.53,0.47) (0.64,0.36) (0.56,0.44) (0.46,0.54) (0.07,0.17,0.76)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	229	8024	0,1277	0,4260	45414
2	(0.23,0.53,0.24) (0.36,0.64) (0.57,0.43) (0.77,0.23) (0.6, 0.4) (0.09,0.13,0.78)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	229	8016	0,1277	0,4229	45355
3	(0.29,0.46,0.25) (0.51,0.49) (0.58,0.42) (0.49,0.51) (0.67,0.33) (0.06,0.89,0.05)	3,13,14,17,18	0,8800	0,1200	0,0193	42,1282	232	8023	0,1200	0,4142	44588
4	(0.23,0.54,0.23) (0.47,0.53) (0.5, 0.5) (0.54,0.46) (0.5, 0.5) (0.09,0.14,0.77)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	228	8013	0,1277	0,4322	45620
5	(0.23,0.18,0.59) (0.39,0.61) (0.32,0.68) (0.43,0.57) (0.34,0.66) (0.09,0.13,0.78)	(12,13,18)	0,8584	0,1416	0,044	218,8044	229	8024	0,1416	0,4266	44353
6	(0.51,0.23,0.26) (0.18,0.82) (0.49,0.51) (0.46,0.54) (0.64,0.36) (0.07,0.88,0.05)	(5,7,14,17,18)	0,8911	0,1089	0,0176	35,0867	230	8012	0,1089	0,4322	44325
7	(0.45,0.28,0.27) (0.46,0.54) (0.38,0.62) (0.75,0.25) (0.74,0.26) (0.09,0.68,0.23)	(5,7,14,17,18)	0,8696	0,1304	0,0183	37,8475	229	8008	0,1304	0,4248	44278
8	(0.24,0.53,0.23) (0.42,0.58) (0.55,0.45) (0.33,0.67) (0.51,0.49) (0.09,0.15,0.76)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	229	8019	0,1277	0,4203	45927
9	(0.23,0.53,0.24) (0.48,0.52) (0.52,0.48) (0.48,0.52) (0.53,0.47) (0.08,0.15,0.77)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	230	8023	0,1277	0,4364	45655
10	(0.23,0.53,0.24) (0.23,0.77) (0.49,0.51) (0.49,0.51) (0.49,0.51) (0.08,0.15,0.77)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	228	8013	0,1277	0,4207	45394

11	(0.21,0.28,0.51) (0.39,0.61) (0.52,0.48) (0.51,0.49) (0.6, 0.4) (0.09,0.09,0.82)	(12,13,18)	0,8550	0,1450	0,0441	219,9307	228	8030	0,1450	0,4219	43990
12	(0.29,0.51, 0.2) (0.53,0.47) (0.84,0.16) (0.58,0.42) (0.54,0.46) (0.07,0.15,0.78)	(7,12,18)	0,8717	0,1283	0,0439	218,0389	229	8025	0,1283	0,4301	45759
13	(0.56, 0.2,0.24) (0.18,0.82) (0.28,0.72) (0.07,0.93) (0.6, 0.4) (0.08,0.87,0.05)	1,13,14,17,18	0,8906	0,1094	0,0178	35,969	228	8006	0,1094	0,4217	44182
14	(0.27,0.48,0.25) (0.52,0.48) (0.56,0.44) (0.46,0.54) (0.65,0.35) (0.08,0.87,0.05)	(2,3,13,17,18)	0,8801	0,1199	0,0176	35,2628	228	8022	0,1199	0,4254	44456
15	(0.43,0.29,0.28) (0.46,0.54) (0.53,0.47) (0.48,0.52) (0.74,0.26) (0.07, 0.7,0.23)	(5,7,14,17,18)	0,8696	0,1304	0,0183	37,8475	229	8021	0,1304	0,4339	44379
16	(0.34,0.34,0.32) (0.52,0.48) (0.81,0.19) (0.53,0.47) (0.26,0.74) (0.9,0.05,0.05)	(3,12,15,18)	0,8553	0,1447	0,0197	43,8297	228	8034	0,1447	0,4269	42513
17	(0.24,0.52,0.24) (0.73,0.27) (0.52,0.48) (0.48,0.52) (0.51,0.49) (0.09,0.09,0.82)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	230	8031	0,1277	0,4323	44157
18	(0.23,0.54,0.23) (0.48,0.52) (0.52,0.48) (0.62,0.38) (0.49,0.51) (0.07,0.15,0.78)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	230	8013	0,1277	0,4312	45567
19	(0.55,0.11,0.34) (0.37,0.63) (0.44,0.56) (0.54,0.46) (0.42,0.58) (0.89,0.06,0.05)	(1,12,18)	0,8501	0,1499	0,0179	36,1348	230	8014	0,1499	0,4353	42867
20	(0.39,0.33,0.28) (0.58,0.42) (0.84,0.16) (0.59,0.41) (0.83,0.17) (0.64,0.06, 0.3)	(7,12,17,18)	0,8458	0,1542	0,019	40,8482	229	8023	0,1542	0,4239	43054
21	(0.22,0.55,0.23) (0.48,0.52) (0.46,0.54) (0.49,0.51) (0.66,0.34) (0.09,0.14,0.77)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	229	8002	0,1277	0,4357	45257
	(0.33,0.41,0.26)										

22	(0.46,0.54) (0.7, 0.3) (0.56,0.44) (0.44,0.56) (0.05,0.19,0.76)	(12,18)	0,8527	0,1473	0,0313	110,8184	229	8004	0,1473	0,4301	45227
23	(0.22,0.54,0.24) (0.46,0.54) (0.74,0.26) (0.58,0.42) (0.29,0.71) (0.09,0.11, 0.8)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	229	8031	0,1277	0,4191	45061
24	(0.41,0.32,0.27) (0.41,0.59) (0.49,0.51) (0.64,0.36) (0.54,0.46) (0.65,0.05, 0.3)	(7,12,16,18)	0,8499	0,1501	0,0187	39,5283	230	8010	0,1501	0,4375	45276
25	(0.51,0.27,0.22) (0.2, 0.8) (0.44,0.56) (0.51,0.49) (0.67,0.33) (0.08,0.87,0.05)	(5,7,14,17,18)	0,8873	0,1127	0,0178	35,8551	229	8012	0,1127	0,4339	45386
26	(0.6,0.09,0.31) (0.36,0.64) (0.83,0.17) (0.55,0.45) (0.54,0.46) (0.88,0.07,0.05)	(7,12,15,18)	0,8516	0,1484	0,0215	52,4481	228	8008	0,1484	0,4288	43699
27	(0.32,0.46,0.22) (0.52,0.48) (0.8, 0.2) (0.3, 0.7) (0.68,0.32) (0.89,0.06,0.05)	(12,15,17,18)	0,8494	0,1506	0,0406	186,2553	231	8009	0,1506	0,4169	43389
28	(0.34,0.38,0.28) (0.19,0.81) (0.8, 0.2) (0.79,0.21) (0.95,0.05) (0.9,0.05,0.05)	(3,12,15,18)	0,8547	0,1453	0,0202	46,1047	230	8005	0,1453	0,4186	43083
29	(0.24,0.53,0.23) (0.46,0.54) (0.53,0.47) (0.6, 0.4) (0.53,0.47) (0.08,0.16,0.76)	(1,12,18)	0,8723	0,1277	0,0439	217,9811	229	8017	0,1277	0,4223	45731
30	(0.55,0.22,0.23) (0.25,0.75) (0.68,0.32) (0.42,0.58) (0.63,0.37) (0.09,0.86,0.05)	5,13,14,17,18	0,8884	0,1116	0,0178	36,0716	229	8010	0,1116	0,4187	44064

D. Resultados del AG3

Tabla A.D.1.1: Resultados de granularidad y proporciones de datos (distribución de landmarks). Concentración Local Máxima de Ozono en Mexico usando la función de costo 1-Q (1000 evaluaciones). Mes Enero

# Ejec.	Granularidad	Proporción de los datos	Opt. Mask	Q	1-Q	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(9 3 3 2 3 3)	(0.11,0.17,0.11, 0.1, 0.1, 0.1, 0.1, 0.1,0.11) (0.05,0.33,0.62) (0.37,0.18,0.45) (0.72,0.28) (0.43,0.25,0.32) (0.08,0.57,0.35)	(7,11,16,18)	0,8275	0,1725	0,0185	38,8083	28	1007	0,1725	0,5035	15255,3
2	(5 3 2 7 2 2)	(0.11,0.16,0.17,0.49,0.07) (0.33,0.33,0.34) (0.81,0.19) (0.15,0.12, 0.1,0.14,0.16,0.16,0.17) (0.44,0.56) (0.93,0.07)	(9,12,15,18)	0,8557	0,1443	0,02	45,1656	28	1025	0,1443	0,4999	15920,5
3	(7 2 3 6 4 3)	(0.14,0.27,0.06, 0.2,0.21,0.05,0.07) (0.52,0.48) (0.33,0.33,0.34) (0.08,0.18,0.05,0.06,0.26,0.37) (0.25,0.25,0.25,0.25) (0.09,0.67,0.24)	(1,14,17,18)	0,8596	0,1404	0,0187	39,5151	28	1026	0,1404	0,5069	17033,85
4	(8 9 5 2 2 2)	(0.06,0.06,0.23,0.08,0.19,0.14,0.14, 0.1) (0.1,0.16, 0.1,0.09,0.17,0.09,0.09,0.09,0.11) (0.26,0.07,0.43,0.09,0.15) (0.5, 0.5) (0.4, 0.6) (0.08,0.92)	(5,10,14,17,18)	0,9842	0,0158	0,0292	96,5474	28	1015	0,0158	0,5118	18211,27
5	(3 5 8 7 2 2)	(0.43,0.29,0.28) (0.2, 0.2, 0.2, 0.2, 0.2) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.16,0.05,0.31,0.09,0.27,0.07,0.05) (0.8, 0.2) (0.67,0.33)	(12,13,17,18)	0,8374	0,1626	0,0178	35,7747	28	1022	0,1626	0,4999	15937,69
6	(6 9 5 7 2 2)	(0.12,0.12,0.13,0.38,0.13,0.12) (0.09, 0.1, 0.1, 0.1, 0.1, 0.1, 0.2, 0.1,0.11) (0.12,0.14,0.46,0.14,0.14) (0.06,0.07,0.42,0.08,0.19,0.05,0.13) (0.5, 0.5) (0.11,0.89)	(7,12,18)	0,8103	0,1897	0,0427	206,4296	28	1021	0,1897	0,5086	19203,15
7	(3 7 9 4 7 2)	(0.33,0.33,0.34) (0.09,0.31,0.05,0.05,0.15,0.17,0.18) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.12,0.36,0.43,0.09) (0.24,0.05,0.15,0.36,0.05,0.05, 0.1) (0.91,0.09)	(6,12,18)	0,8279	0,1721	0,0369	153,8596	28	1025	0,1721	0,4999	20758,87
8	(3 9 6 6 9 2)	(0.36,0.21,0.43) (0.29,0.05,0.06,0.09,0.05,0.05,0.05,0.15,0.21) (0.05,0.05,0.17,0.31,0.33,0.09) (0.16,0.16,0.17,0.17,0.17,0.17) (0.17,0.06,0.09,0.09,0.09, 0.2,0.06, 0.1,0.14) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	27	1002	0,1255	0,4999	30890,85
9	(4 5 4 8 8 2)	(0.46,0.09,0.05, 0.4) (0.25,0.21,0.06,0.25,0.23) (0.25,0.25,0.25,0.25) (0.1, 0.2,0.08,0.09,0.24,0.07,0.12, 0.1) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	28	1015	0,1255	0,5117	23202,63
10	(3 3 3 5 2 2)	(0.33,0.33,0.34) (0.33,0.33,0.34) (0.08,0.37,0.55) (0.2, 0.2, 0.2, 0.2, 0.2) (0.39,0.61) (0.08,0.92)	(11,14,16,17,18)	0,9809	0,0191	0,0297	99,9588	28	1021	0,0191	0,5001	18039,76

11	(2 7 2 3 3 3)	(0.79,0.21) (0.13, 0.1,0.08,0.29,0.07,0.07,0.26) (0.83,0.17) (0.24,0.67,0.09) (0.22,0.45,0.33) (0.05,0.18,0.77)	(1,12,18)	0,8594	0,1406	0,0429	208,0021	28	1024	0,1406	0,5095	13827,05
12	(3 7 6 5 4 2)	(0.33,0.33,0.34) (0.11,0.11,0.11,0.32,0.11,0.12,0.12) (0.12,0.36,0.09,0.25, 0.1,0.08) (0.2, 0.2, 0.2, 0.2, 0.2) (0.27,0.35, 0.2,0.18) (0.18,0.82)	(6,12,13,18)	0,8083	0,1917	0,0428	207,5081	27	1005	0,1917	0,517	23159,11
13	(7 4 9 2 7 3)	(0.07,0.25,0.15,0.05,0.11,0.16,0.21) (0.11,0.71,0.11,0.07) (0.11, 0.1, 0.1, 0.1,0.18, 0.1, 0.1, 0.1,0.11) (0.61,0.39) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.05,0.86,0.09)	(10,15,17,18)	0,854	0,146	0,021	50,1102	28	1037	0,146	0,5019	26904,13
14	(4 7 7 2 2 2)	(0.25,0.25,0.25,0.25) (0.15,0.09,0.15,0.25,0.18,0.09,0.09) (0.05,0.05,0.38, 0.1,0.22,0.05,0.15) (0.5, 0.5) (0.43,0.57) (0.09,0.91)	(5,14,16,17,18)	0,9837	0,0163	0,0299	101,212	27	1009	0,0163	0,5115	17425,35
15	(2 6 7 4 8 3)	(0.72,0.28) (0.25,0.23,0.12,0.14,0.12,0.14) (0.12,0.14,0.22,0.08,0.26,0.11,0.07) (0.21,0.28, 0.4,0.11) (0.05,0.05,0.27,0.27,0.05,0.09,0.09,0.13) (0.05,0.14,0.81)	(1,12,18)	0,8581	0,1419	0,0426	205,5099	28	1016	0,1419	0,5068	19337,4
16	(7 4 2 2 8 2)	(0.05,0.17,0.21,0.17,0.13,0.13,0.14) (0.25,0.25,0.25,0.25) (0.4, 0.6) (0.5, 0.5) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.75,0.25)	(7,11,18)	0,7963	0,2037	0,0214	51,818	28	1026	0,2037	0,5246	23766,9
17	(3 7 3 2 6 2)	(0.62,0.18, 0.2) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.33,0.33,0.34) (0.5, 0.5) (0.27,0.11,0.17,0.07,0.15,0.23) (0.06,0.94)	(10,14,17,18)	0,9795	0,0205	0,0318	114,4467	28	1021	0,0203	0,4999	17855,71
18	(6 9 5 6 9 2)	(0.07,0.28,0.14, 0.2,0.22,0.09) (0.05,0.22,0.11,0.17,0.08,0.06,0.18,0.06,0.07) (0.2, 0.2, 0.2, 0.2, 0.2) (0.31,0.06,0.12,0.16,0.18,0.17) (0.08,0.09,0.07,0.05,0.06,0.13,0.31, 0.1,0.11) (0.65,0.35)	(1,12,18)	0,8364	0,1636	0,0204	47,2839	28	1023	0,1636	0,5235	20325,43
19	(7 5 3 7 6 2)	(0.11,0.25,0.07,0.08,0.18, 0.1,0.21) (0.2, 0.2, 0.2, 0.2, 0.2) (0.21,0.12,0.67) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.3,0.11,0.27,0.11,0.09,0.12) (0.67,0.33)	(1,12,18)	0,8465	0,1535	0,0299	101,4323	28	1023	0,1535	0,5174	24282,1
20	(5 8 8 2 8 2)	(0.39,0.23,0.13,0.06,0.19) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.08,0.11,0.15,0.12,0.11,0.06,0.21,0.16) (0.74,0.26) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.64,0.36)	(7,12,16,18)	0,8286	0,1714	0,018	36,5394	27	1004	0,1714	0,5038	27148,09
21	(5 6 7 3 5 2)	(0.4,0.11,0.13,0.07,0.29) (0.3,0.05,0.07,0.19,0.08,0.31) (0.18,0.08,0.11,0.17,0.22,0.19,0.05) (0.14,0.61,0.25) (0.19,0.29,0.27,0.13,0.12) (0.68,0.32)	(7,12,18)	0,854	0,146	0,0202	46,1048	28	1021	0,146	0,5035	15677,63
		(0.61,0.39)										

22	(2 2 2 4 2 2)	(0.24,0.76) (0.86,0.14) (0.25,0.25,0.25,0.25) (0.84,0.16) (0.9, 0.1)	(1,8,12,15,18)	0,8409	0,1591	0,0183	37,8244	28	1023	0,1591	0,506	15260
23	(6 3 3 9 9 2)	(0.14,0.25,0.22,0.08, 0.1,0.21) (0.05,0.33,0.62) (0.22,0.38, 0.4) (0.06,0.06,0.19,0.08,0.06,0.11, 0.1,0.26,0.08) (0.05,0.07,0.22,0.08,0.05,0.12, 0.1,0.23,0.08) (0.66,0.34)	(7,12,18)	0,8382	0,1618	0,0326	120,5906	28	1019	0,1618	0,5063	20268,73
24	(3 2 8 4 2 2)	(0.39,0.31, 0.3) (0.24,0.76) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.46,0.19, 0.3,0.05) (0.72,0.28) (0.7, 0.3)	(7,12,17,18)	0,8534	0,1466	0,0178	35,7115	28	1012	0,1466	0,507	19528,46
25	(4 3 3 5 4 3)	(0.25,0.25,0.25,0.25) (0.33,0.33,0.34) (0.33,0.33,0.34) (0.2, 0.2, 0.2, 0.2, 0.2) (0.25,0.25,0.25,0.25) (0.06, 0.8,0.14)	(8,13,17,18)	0,8278	0,1722	0,0178	35,9356	28	1029	0,1722	0,4999	16851,63
26	(6 7 5 4 2 2)	(0.35,0.06,0.23,0.05,0.24,0.07) (0.17,0.05,0.28,0.22,0.07,0.12,0.09) (0.05,0.05,0.45,0.05, 0.4) (0.18,0.53,0.21,0.08) (0.22,0.78) (0.63,0.37)	(1,12,18)	0,8305	0,1695	0,019	41,0929	28	1021	0,1695	0,5151	19421,83
27	(6 2 8 4 3 2)	(0.09,0.18,0.16, 0.2,0.16,0.21) (0.44,0.56) (0.2,0.06,0.12,0.05,0.07, 0.1,0.31,0.09) (0.26,0.32,0.13,0.29) (0.1,0.57,0.33) (0.64,0.36)	(12,13,18)	0,8346	0,1654	0,0212	50,7439	28	1022	0,1654	0,504	18236,91
28	(5 8 4 8 2 2)	(0.07,0.11,0.42,0.33,0.07) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.27,0.07,0.58,0.08) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.76,0.24) (0.11,0.89)	(1,6,12,18)	0,81	0,19	0,0408	188,6248	28	1020	0,19	0,5038	18624,95
29	(4 6 9 6 8 3)	(0.25,0.25,0.25,0.25) (0.16,0.16,0.17,0.17,0.17,0.17) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.13,0.16,0.25,0.07,0.09, 0.3) (0.2,0.18,0.05,0.05,0.24,0.09,0.08,0.11) (0.89,0.06,0.05)	(6,12,18)	0,8429	0,1571	0,0485	266,13	28	1008	0,1571	0,504	25028,65
30	(4 6 4 7 7 2)	(0.13,0.14,0.35,0.38) (0.17,0.05,0.31,0.17,0.11,0.19) (0.36,0.07,0.26,0.31) (0.14,0.06,0.05,0.33,0.05,0.27, 0.1) (0.23,0.05,0.05,0.08,0.25,0.17,0.17) (0.23,0.77)	(6,7,12,18)	0,809	0,191	0,0433	212,1777	28	1020	0,191	0,5172	21735

Tabla A.D.1.2: Resultados de granularidad y proporciones de datos (distribución de landmarks). Concentración Local Máxima de Ozono en Mexico usando la función de costo 1-Q (2000 evaluaciones). Mes Enero

# Ejec.	Granularidad	Proporción de los datos	Opt. Mask	Q	1-Q	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(7 8 7 7 2 2)	(0.45,0.08,0.09,0.15,0.05,0.11,0.07) (0.09,0.07,0.13,0.18,0.18,0.06,0.15,0.14) (0.21,0.19,0.36,0.05,0.05,0.05,0.09) (0.12,0.21,0.08,0.22,0.07,0.22,0.08) (0.57,0.43) (0.66,0.34)	(12,13,18)	0,8433	0,1567	0,036	146,932	57	2022	0,1567	0,5117	43363,06
2	(2 6 8 6 2 2)	(0.64,0.36) (0.18,0.05,0.06,0.15,0.51,0.05) (0.32,0.11,0.05,0.05,0.21,0.05,0.16,0.05) (0.1,0.12, 0.2,0.05,0.09,0.44) (0.63,0.37) (0.95,0.05)	(1,6,12,18)	0,8795	0,1205	0,0182	37,3254	57	2020	0,1205	0,5387	27738,03
3	(3 2 2 3 2 2)	(0.33,0.33,0.34) (0.29,0.71) (0.5, 0.5) (0.33,0.33,0.34) (0.67,0.33) (0.95,0.05)	(12,14,17,18)	0,8785	0,1215	0,0414	194,3629	57	2029	0,1215	0,5115	25190,22
4	(3 7 8 2 3 3)	(0.37,0.32,0.31) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.1,0.08,0.06,0.18,0.16,0.18, 0.1,0.14) (0.74,0.26) (0.36, 0.4,0.24) (0.64,0.05,0.31)	(1,12,16,18)	0,8395	0,1605	0,019	40,6837	57	2025	0,1605	0,4999	24899,91
5	(3 9 6 6 3 2)	(0.59,0.36,0.05) (0.2,0.06,0.16,0.21,0.06,0.06,0.09,0.11,0.05) (0.16,0.16,0.17,0.17,0.17,0.17) (0.16,0.16,0.17,0.17,0.17,0.17) (0.23,0.23,0.54) (0.06,0.94)	(5,14,17,18)	0,9825	0,0175	0,0293	97,301	57	2028	0,0175	0,5087	29107,83
6	(5 8 3 4 2 2)	(0.25,0.05,0.05,0.56,0.09) (0.15, 0.1,0.14,0.19,0.08,0.11,0.12,0.11) (0.13,0.44,0.43) (0.25,0.25,0.25,0.25) (0.21,0.79) (0.07,0.93)	(5,14,16,18)	0,9809	0,0191	0,0293	97,0714	56	2006	0,0191	0,4999	31020,85
7	(3 9 6 8 7 2)	(0.3,0.39,0.31) (0.1, 0.1, 0.1, 0.1, 0.1,0.21, 0.1,0.09, 0.1) (0.11,0.18,0.28,0.07,0.13,0.23) (0.09,0.13, 0.3,0.06,0.08, 0.2,0.07,0.07) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.08,0.92)	(10,14,18)	0,9825	0,0175	0,0327	120,794	57	2030	0,0175	0,51	62857,01
8	(3 3 4 3 8 2)	(0.59,0.16,0.25) (0.42,0.42,0.16) (0.25,0.25,0.25,0.25) (0.18,0.64,0.18) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.95,0.05)	(12,13,18)	0,8784	0,1216	0,0275	85,8912	57	2012	0,1216	0,5033	31444,45
9	(4 5 3 4 2 2)	(0.57,0.15,0.14,0.14) (0.2, 0.2, 0.2, 0.2, 0.2) (0.33,0.33,0.34) (0.25,0.25,0.25,0.25) (0.37,0.63) (0.06,0.94)	(5,14,16,17,18)	0,984	0,016	0,0293	97,1878	57	2017	0,016	0,4999	25292,75
10	(3 6 2 3 2 2)	(0.33,0.33,0.34) (0.16,0.16,0.17,0.17,0.17,0.17) (0.18,0.82) (0.33,0.33,0.34) (0.44,0.56) (0.72,0.28)	(1,12,18)	0,8226	0,1774	0,0187	39,7079	57	2007	0,1774	0,5075	29187,87

11	(5 2 4 5 2 2)	(0.2,0.24,0.13,0.22,0.21) (0.26,0.74) (0.15, 0.5, 0.3,0.05) (0.17,0.17,0.31,0.17,0.18) (0.86,0.14) (0.69,0.31)	(12,13,18)	0,8588	0,1412	0,0203	46,7949	57	2032	0,1412	0,502	38515,42
12	(8 2 9 7 7 3)	(0.1,0.22,0.07,0.06,0.26,0.19,0.05,0.05) (0.6, 0.4) (0.1,0.13, 0.1, 0.1,0.13, 0.1,0.11, 0.1,0.13) (0.28,0.08,0.05,0.05,0.16,0.05,0.33) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.05,0.69,0.26)	(7,17,18)	0,8417	0,1583	0,0207	48,572	57	2034	0,1583	0,4999	74629,43
13	(2 7 8 9 4 2)	(0.23,0.77) (0.12,0.12,0.12,0.12,0.12,0.28,0.12) (0.06,0.05, 0.1,0.28,0.06,0.05,0.27,0.13) (0.05,0.09,0.11,0.05,0.09,0.09,0.23,0.11,0.18) (0.39,0.19,0.14,0.28) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	56	2012	0,1255	0,5047	32363,11
14	(6 3 8 2 2 3)	(0.15,0.11,0.23,0.24, 0.2,0.07) (0.34, 0.4,0.26) (0.12,0.29,0.14,0.06,0.11,0.09,0.12,0.07) (0.56,0.44) (0.68,0.32) (0.08,0.78,0.14)	(5,10,15,17,18)	0,8445	0,1555	0,0216	52,8171	57	2007	0,1555	0,5173	29902,46
15	(4 6 2 3 2 2)	(0.39,0.18,0.17,0.26) (0.16,0.21,0.18,0.15,0.07,0.23) (0.64,0.36) (0.33,0.33,0.34) (0.75,0.25) (0.73,0.27)	(7,12,18)	0,8537	0,1463	0,0265	79,5119	57	2016	0,1463	0,5041	28918,15
16	(9 3 6 7 7 2)	(0.09,0.09,0.21, 0.1, 0.1, 0.1, 0.1, 0.1,0.11) (0.33,0.33,0.34) (0.16,0.16,0.17,0.17,0.17,0.17) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.67,0.33)	(7,12,18)	0,8441	0,1559	0,0292	96,4742	57	2016	0,1559	0,5051	41436,75
17	(2 2 3 2 5 2)	(0.62,0.38) (0.35,0.65) (0.25,0.38,0.37) (0.82,0.18) (0.2, 0.2, 0.2, 0.2, 0.2) (0.91,0.09)	(1,12,14,18)	0,8385	0,1615	0,0217	53,4444	58	2030	0,1615	0,4999	28648,36
18	(2 2 4 3 7 2)	(0.65,0.35) (0.11,0.89) (0.25,0.25,0.25,0.25) (0.33,0.33,0.34) (0.14,0.16,0.05,0.19,0.21,0.19,0.06) (0.94,0.06)	(1,12,14,18)	0,8669	0,1331	0,0232	60,8943	57	2034	0,1331	0,5058	35061,11
19	(3 4 2 2 3 2)	(0.21,0.55,0.24) (0.51,0.16,0.16,0.17) (0.68,0.32) (0.5, 0.5) (0.33,0.33,0.34) (0.07,0.93)	(11,14,17,18)	0,9814	0,0186	0,0308	107,1106	57	2025	0,0177	0,5268	20850,33
20	(4 2 8 3 2 2)	(0.41,0.22,0.11,0.26) (0.5, 0.5) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.52,0.05,0.43) (0.86,0.14) (0.71,0.29)	(7,12,18)	0,8649	0,1351	0,0316	113,3068	57	2037	0,1351	0,5168	24837,52
21	(3 4 2 4 2 2)	(0.28, 0.5,0.22) (0.25,0.25,0.25,0.25) (0.29,0.71) (0.25,0.25,0.25,0.25) (0.77,0.23) (0.23,0.77)	(6,7,12,18)	0,8218	0,1782	0,0292	96,7374	57	2014	0,1782	0,5136	23408,99
		(0.05,0.09,0.22,0.05,0.05, 0.1,0.11, 0.1,0.23)										

22	(9 4 9 3 3 3)	(0.44,0.19,0.19,0.18) (0.09,0.07,0.23,0.06,0.15,0.12,0.14,0.08,0.06) (0.38,0.19,0.43) (0.29,0.22,0.49) (0.07,0.64,0.29)	(1,14,18)	0,8546	0,1454	0,0209	49,6094	56	2015	0,1454	0,5038	57974,6
23	(8 8 3 2 2 2)	(0.17,0.05,0.19,0.12,0.15,0.06,0.11,0.15) (0.11,0.24,0.13, 0.2,0.07,0.09,0.09,0.07) (0.33,0.33,0.34) (0.5, 0.5) (0.45,0.55) (0.06,0.94)	(5,14,16,17,18)	0,9857	0,0143	0,0297	100,1444	57	2029	0,0143	0,5038	31299,03
24	(9 5 7 6 9 2)	(0.15,0.08,0.17,0.08,0.08,0.08,0.08,0.18, 0.1) (0.3,0.22,0.05,0.38,0.05) (0.31,0.21,0.05,0.05,0.11,0.05,0.22) (0.16,0.16,0.17,0.17,0.17,0.17) (0.06,0.14,0.23,0.08,0.09,0.07,0.22,0.06,0.05) (0.63,0.37)	(7,12,18)	0,8263	0,1737	0,0206	48,1994	56	2017	0,1737	0,5115	36434,67
25	(2 2 4 3 3 3)	(0.83,0.17) (0.62,0.38) (0.25,0.25,0.25,0.25) (0.33,0.33,0.34) (0.2,0.75,0.05) (0.05,0.16,0.79)	(1,12,18)	0,8582	0,1418	0,0429	208,8882	57	2032	0,1418	0,5115	28594,2
26	(4 7 2 8 2 2)	(0.34,0.24,0.11,0.31) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.5, 0.5) (0.09, 0.1, 0.1,0.27,0.11,0.11,0.11,0.11) (0.72,0.28) (0.7, 0.3)	(1,12,17,18)	0,8746	0,1254	0,0185	38,5709	56	2005	0,1254	0,5067	30419,8
27	(2 2 5 4 3 2)	(0.59,0.41) (0.32,0.68) (0.51,0.06,0.06,0.06,0.31) (0.25,0.25,0.25,0.25) (0.54,0.23,0.23) (0.91,0.09)	(1,6,12,18)	0,8385	0,1615	0,0254	73,2609	57	2020	0,1615	0,4999	22393,56
28	(7 2 7 3 4 2)	(0.06,0.32,0.26,0.14,0.05,0.05,0.12) (0.2, 0.8) (0.07,0.08,0.06,0.31,0.18,0.25,0.05) (0.14,0.22,0.64) (0.14,0.55,0.15,0.16) (0.92,0.08)	(12,14,17,18)	0,8468	0,1532	0,0446	225,0667	57	2033	0,1532	0,5113	41725,54
29	(3 9 4 2 2 2)	(0.33,0.33,0.34) (0.12,0.12,0.12,0.12,0.12,0.12,0.11,0.11,0.06) (0.39,0.22, 0.1,0.29) (0.5, 0.5) (0.33,0.67) (0.08,0.92)	(5,10,14,17,18)	0,9853	0,0147	0,0291	95,9491	56	2006	0,0147	0,5182	28612,45
30	(8 9 8 4 3 2)	(0.12,0.05,0.19,0.11,0.06,0.09, 0.3,0.08) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.18, 0.1,0.06,0.18,0.11,0.25,0.06,0.06) (0.25,0.25,0.25,0.25) (0.33,0.33,0.34) (0.09,0.91)	(5,14,16,18)	0,9819	0,0181	0,0298	100,8255	56	2027	0,0181	0,5116	42898,38

Tabla A.D.1.3: Resultados de granularidad y proporciones de datos (distribución de landmarks). Concentración Local Máxima de Ozono en Mexico usando la función de costo 1-Q (4000 evaluaciones). Mes Enero

# Ejec.	Granularidad	Proporción de los datos	Opt. Mask	Q	1-Q	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(4 3 2 3 3 2)	(0.34,0.19,0.16,0.31) (0.33,0.33,0.34) (0.5, 0.5) (0.33,0.33,0.34) (0.33,0.33,0.34) (0.71,0.29)	(1,12,18)	0,8632	0,1368	0,0293	96,8959	114	4003	0,1368	0,5008	43007,92
2	(5 2 2 4 3 2)	(0.43,0.13,0.14,0.15,0.15) (0.22,0.78) (0.87,0.13) (0.25,0.25,0.25,0.25) (0.53,0.23,0.24) (0.93,0.07)	(12,14,15,17,18)	0,8688	0,1312	0,0252	72,0276	115	4016	0,1312	0,5204	56115,23
3	(2 6 7 4 2 2)	(0.6, 0.4) (0.17,0.16,0.17,0.17,0.18,0.15) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.25,0.25,0.25,0.25) (0.66,0.34) (0.93,0.07)	(1,6,12,18)	0,8542	0,1458	0,0186	39,2433	115	4029	0,1458	0,5128	43098,96
4	(5 7 3 3 2 2)	(0.2, 0.2, 0.2, 0.2, 0.2) (0.19, 0.1,0.33, 0.1, 0.1,0.11,0.07) (0.33,0.33,0.34) (0.25,0.25, 0.5) (0.36,0.64) (0.08,0.92)	(5,10,14,17,18)	0,9854	0,0146	0,0291	96,1928	114	4031	0,0143	0,5228	48599,86
5	(2 4 3 9 3 2)	(0.67,0.33) (0.25,0.25,0.25,0.25) (0.78,0.17,0.05) (0.11,0.11,0.12,0.12,0.12,0.05,0.12,0.12,0.13) (0.33,0.33,0.34) (0.93,0.07)	(7,12,15,18)	0,8761	0,1239	0,0211	50,3624	114	4029	0,1239	0,4999	66881,98
6	(3 5 4 6 7 2)	(0.29,0.48,0.23) (0.2, 0.2, 0.2, 0.2, 0.2) (0.26,0.26,0.26,0.22) (0.16,0.16,0.17,0.17,0.17,0.17) (0.34,0.09,0.11,0.11,0.11,0.12,0.12) (0.2, 0.8)	(6,7,12,18)	0,8218	0,1782	0,0292	96,7374	114	4007	0,1782	0,5138	56336,5
7	(2 9 2 4 2 2)	(0.59,0.41) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.5, 0.5) (0.25,0.25,0.25,0.25) (0.55,0.45) (0.94,0.06)	(1,6,12,18)	0,8652	0,1348	0,0212	51,0892	114	4012	0,1348	0,5148	44970,26
8	(4 6 2 8 6 2)	(0.08,0.28,0.32,0.32) (0.16,0.16,0.17,0.17,0.17,0.17) (0.78,0.22) (0.11,0.11,0.11,0.11,0.23,0.11,0.11,0.11) (0.16,0.16,0.17,0.17,0.17,0.17) (0.92,0.08)	(3,12,15,18)	0,8559	0,1441	0,0212	50,8279	114	4005	0,1441	0,54	75371,41
9	(2 3 7 3 4 4)	(0.78,0.22) (0.12,0.73,0.15) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.33,0.33,0.34) (0.4,0.08,0.15,0.37) (0.05,0.05, 0.1, 0.8)	(1,12,18)	0,8594	0,1406	NO PREDICE	NO PREDICE	113	4003	0,1406	0,517	47160,21
10	(7 2 9 3 3 3)	(0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.51,0.49) (0.1, 0.1, 0.1,0.17, 0.1, 0.1, 0.1,0.11,0.12) (0.33,0.33,0.34) (0.26,0.42,0.32) (0.05,0.88,0.07)	(15,16,17,18)	0,8697	0,1303	0,0217	53,2381	113	4004	0,1303	0,5167	62504,54

11	(8 4 5 5 8 2)	(0.05,0.05,0.08,0.16,0.12,0.22,0.11,0.21) (0.27,0.27,0.33,0.13) (0.2, 0.2, 0.2, 0.2, 0.2) (0.35,0.07,0.09,0.39, 0.1) (0.09,0.09,0.09,0.09, 0.1, 0.1,0.16,0.28) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	115	4024	0,1382	0,518	117816,68
12	(7 8 5 4 2 2)	(0.17,0.14,0.14,0.14,0.14,0.15,0.12) (0.13,0.27,0.16,0.07,0.09,0.11, 0.1,0.07) (0.14,0.48,0.13,0.13,0.12) (0.22,0.32,0.23,0.23) (0.29,0.71) (0.09,0.91)	(10,14,17,18)	0,9842	0,0158	0,0312	110,0029	114	4035	0,0158	0,5094	55054,07
13	(2 7 2 2 2 2)	(0.64,0.36) (0.12,0.21,0.13,0.13,0.13,0.14,0.14) (0.78,0.22) (0.45,0.55) (0.7, 0.3) (0.93,0.07)	(12,15,17,18)	0,8764	0,1236	0,0457	236,2766	114	4012	0,1236	0,5243	41575
14	(8 2 3 3 3 3)	(0.24,0.15,0.06,0.16,0.06,0.12,0.15,0.06) (0.49,0.51) (0.38,0.22, 0.4) (0.63,0.19,0.18) (0.42,0.28, 0.3) (0.05,0.67,0.28)	(7,14,16,18)	0,869	0,131	0,0204	46,9275	114	4007	0,131	0,4999	47714,56
15	(7 3 2 2 3 2)	(0.13,0.06,0.08,0.08,0.36,0.21,0.08) (0.67,0.17,0.16) (0.51,0.49) (0.69,0.31) (0.33,0.33,0.34) (0.08,0.92)	(4,14,16,17,18)	0,9822	0,0178	0,0297	100,0938	115	4012	0,0178	0,4999	50725,35
16	(7 5 3 2 3 2)	(0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.05,0.07,0.42,0.18,0.28) (0.79,0.05,0.16) (0.56,0.44) (0.49,0.15,0.36) (0.93,0.07)	(12,15,17,18)	0,8685	0,1315	0,0438	217,1166	114	4028	0,1315	0,5056	48950,44
17	(8 2 5 2 2 3)	(0.1, 0.1,0.22, 0.1,0.15, 0.1, 0.1,0.13) (0.51,0.49) (0.21,0.19, 0.2,0.21,0.19) (0.68,0.32) (0.53,0.47) (0.05,0.65, 0.3)	(13,14,16,18)	0,8674	0,1326	0,0197	44,0176	114	4022	0,1326	0,5131	55292,27
18	(2 2 2 4 3 2)	(0.65,0.35) (0.29,0.71) (0.78,0.22) (0.54, 0.1,0.23,0.13) (0.33,0.33,0.34) (0.95,0.05)	(1,12,15,18)	0,8942	0,1058	0,0225	57,463	114	4003	0,1058	0,5038	43362,35
19	(3 4 2 8 3 2)	(0.3,0.51,0.19) (0.25,0.25,0.25,0.25) (0.5, 0.5) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.43,0.17, 0.4) (0.12,0.88)	(6,12,13,18)	0,8224	0,1776	0,0427	206,0587	116	4020	0,1776	0,502	46466,18
20	(2 6 2 2 6 2)	(0.63,0.37) (0.2,0.15,0.23,0.13,0.13,0.16) (0.78,0.22) (0.41,0.59) (0.4,0.11,0.12,0.12,0.12,0.13) (0.93,0.07)	(1,12,15,18)	0,8743	0,1257	0,0225	57,2874	114	4029	0,1257	0,5192	48393,84
21	(7 8 2 3 4 2)	(0.1,0.27,0.13,0.09,0.11,0.16,0.14) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.71,0.29) (0.33,0.33,0.34) (0.05,0.05,0.83,0.07) (0.67,0.33)	(1,12,18)	0,8483	0,1517	0,0309	108,1215	113	4001	0,1517	0,512	96052,62
		(0.1, 0.1, 0.1, 0.1, 0.1,0.19, 0.1, 0.1,0.11)										

22	(9 8 2 3 2 2)	(0.11,0.12,0.12,0.12,0.06,0.16,0.14,0.17) (0.75,0.25) (0.19,0.63,0.18) (0.63,0.37) (0.9, 0.1)	(12,15,17,18)	0,8385	0,1615	0,0438	217,2012	113	4002	0,1615	0,5175	51822,52
23	(3 8 3 3 7 2)	(0.34,0.34,0.32) (0.1, 0.1,0.22, 0.1,0.11,0.12,0.12,0.13) (0.29,0.61, 0.1) (0.34,0.34,0.32) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	115	4027	0,1255	0,5127	63894,98
24	(5 2 4 4 2 2)	(0.35,0.13,0.22,0.12,0.18) (0.5, 0.5) (0.25,0.25,0.25,0.25) (0.37,0.36,0.14,0.13) (0.83,0.17) (0.67,0.33)	(1,12,17,18)	0,8609	0,1391	0,0177	35,459	114	4018	0,1391	0,5052	38138,95
25	(3 9 2 8 2 2)	(0.33,0.33,0.34) (0.14,0.09,0.12, 0.1, 0.1, 0.1,0.11,0.13,0.11) (0.76,0.24) (0.17,0.09,0.25,0.14,0.06,0.18,0.05,0.06) (0.69,0.31) (0.91,0.09)	(12,15,17,18)	0,8572	0,1428	0,0403	183,5469	114	4033	0,142	0,5073	77841,46
26	(2 3 4 3 3 3)	(0.57,0.43) (0.14,0.23,0.63) (0.25,0.25,0.25,0.25) (0.21,0.23,0.56) (0.26,0.19,0.55) (0.84,0.05,0.11)	(1,12,14,18)	0,8172	0,1828	0,023	59,8352	115	4034	0,1828	0,5065	45817,72
27	(3 6 8 5 9 2)	(0.52,0.43,0.05) (0.13,0.13,0.32,0.14,0.14,0.14) (0.09,0.19,0.09,0.09,0.13,0.06,0.27,0.08) (0.17, 0.1, 0.1, 0.1,0.53) (0.07,0.12,0.12,0.05,0.05,0.18,0.09, 0.1,0.22) (0.94,0.06)	(6,12,18)	0,8618	0,1382	0,0621	437,3952	114	4035	0,1382	0,4999	104340,86
28	(3 3 4 2 2 2)	(0.34,0.32,0.34) (0.38,0.24,0.38) (0.17,0.17,0.16, 0.5) (0.68,0.32) (0.63,0.37) (0.69,0.31)	(1,12,16,18)	0,8534	0,1466	0,0183	37,9225	114	4027	0,1466	0,5079	46874,67
29	(3 6 4 4 2 2)	(0.3, 0.3, 0.4) (0.15, 0.2,0.15,0.16,0.16,0.18) (0.25,0.25,0.25,0.25) (0.25,0.25,0.25,0.25) (0.39,0.61) (0.05,0.95)	(5,14,16,17,18)	0,9845	0,0155	0,0294	97,8162	114	4031	0,0155	0,4999	54047,93
30	(7 9 6 2 7 2)	(0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.1, 0.1, 0.1, 0.1, 0.1,0.21, 0.1,0.09, 0.1) (0.09,0.11,0.27,0.28,0.12,0.13) (0.5, 0.5) (0.11,0.11,0.11,0.12,0.12,0.13, 0.3) (0.05,0.95)	(14,16,17,18)	0,9849	0,0151	0,0311	109,5451	115	4026	0,0151	0,5113	89617,69

Tabla A.D.1.4: Resultados de granularidad y proporciones de datos (distribución de landmarks). Concentración Local Máxima de Ozono en Mexico usando la función de costo 1-Q (8000 evaluaciones). Mes Enero

# Ejec.	Granularidad	Proporción de los datos	Opt. Mask	Q	1-Q	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(9 3 9 2 3 3)	(0.17,0.18,0.16,0.07,0.13,0.07,0.07,0.07,0.08) (0.55,0.14,0.31) (0.1,0.18,0.13,0.11,0.11,0.11, 0.1, 0.1,0.06) (0.51,0.49) (0.32,0.32,0.36) (0.05, 0.9,0.05)	(4,11,15,16,18)	0,8948	0,1052	0,0208	48,9544	229	8006	0,1052	0,5113	159095,39
2	**(8 2 5 6 2 2)**	**(0.1, 0.1,0.19, 0.1,0.11,0.11,0.11,0.18)** **(0.43,0.57)** **(0.08,0.43,0.06,0.29,0.14)** **(0.16,0.16,0.17,0.17,0.17,0.17)** **(0.5, 0.5)** **(0.68,0.32)**	**(7,12,18)**	**0,853**	**0,147**	**0,0202**	46,1995	229	8012	0,147	0,5152	125110,97
3	(5 3 2 4 2 2)	(0.19,0.32,0.19, 0.2, 0.1) (0.15,0.63,0.22) (0.78,0.22) (0.25,0.25,0.25,0.25) (0.7, 0.3) (0.93,0.07)	(12,15,17,18)	0,8764	0,1236	0,0457	236,2766	230	8009	0,1236	0,5151	70860,13
4	(4 8 2 4 2 2)	(0.26,0.25,0.25,0.24) (0.25, 0.1, 0.1, 0.1,0.11,0.11,0.12,0.11) (0.77,0.23) (0.37,0.27,0.18,0.18) (0.71,0.29) (0.92,0.08)	(12,15,17,18)	0,871	0,129	0,0439	218,6271	229	8010	0,129	0,5069	64244,72
5	(4 6 2 7 2 2)	(0.36,0.05,0.17,0.42) (0.13,0.13,0.14,0.14,0.15,0.31) (0.76,0.24) (0.12,0.12,0.25,0.12,0.12,0.13,0.14) (0.71,0.29) (0.92,0.08)	(12,15,17,18)	0,872	0,128	0,0427	206,4666	228	8026	0,128	0,5011	70506,36
6	**(2 6 2 3 7 2)**	**(0.64,0.36)** **(0.43, 0.1,0.11,0.12,0.12,0.12)** **(0.8, 0.2)** **(0.31, 0.3,0.39)** **(0.14,0.14,0.14,0.14,0.14,0.15,0.15)** **(0.94,0.06)**	**(1,12,15,18)**	**0,8809**	**0,1191**	**0,0231**	60,4578	228	8022	0,1191	0,5055	66805,58
7	(9 5 2 2 3 2)	(0.09,0.09,0.18,0.17, 0.1, 0.1, 0.1,0.09,0.08) (0.22,0.22,0.22,0.13,0.21) (0.5, 0.5) (0.5, 0.5) (0.22,0.23,0.55) (0.09,0.91)	(5,14,16,17,18)	0,9846	0,0154	0,0295	98,5953	229	8031	0,0154	0,5235	81953
8	(5 5 5 2 2 2)	(0.2, 0.2, 0.2, 0.2, 0.2) (0.14,0.16,0.42,0.21,0.07) (0.11,0.22,0.27,0.23,0.17) (0.5, 0.5) (0.45,0.55) (0.08,0.92)	(5,14,16,17,18)	0,9844	0,0156	0,0293	97,2895	230	8033	0,0156	0,5194	93026,1
9	(9 4 4 4 3 2)	(0.08,0.11,0.05,0.24,0.16,0.07,0.06,0.08,0.15) (0.18,0.05,0.06,0.71) (0.16,0.37,0.15,0.32) (0.31,0.19,0.28,0.22) (0.38,0.37,0.25) (0.92,0.08)	(12,14,17,18)	0,8523	0,1477	0,0433	212,2499	229	8006	0,1477	0,5151	119562,91
10	(2 8 3 3 3 4)	(0.4, 0.6) (0.1, 0.1, 0.1, 0.1,0.11,0.12,0.12,0.25) (0.33,0.33,0.34) (0.17,0.18,0.65) (0.33,0.33,0.34) (0.05,0.15,0.75,0.05)	(12,17,18)	0,8028	0,1972	0,0558	352,8502	229	8023	0,1972	0,5081	92504,41

11	**(5 5 3 8 2 2)**	**(0.38,0.08, 0.1,0.17,0.27)** **(0.2, 0.2, 0.2, 0.2, 0.2)** **(0.43,0.42,0.15)** **(0.09,0.12,0.09,0.09,0.23,0.18, 0.1, 0.1)** **(0.83,0.17)** **(0.69,0.31)**	**(7,12,17,18)**	**0,8737**	**0,1263**	**0,0179**	36,375	230	8035	0,1263	0,5045	132769,07
12	(3 2 4 3 3 3)	(0.34,0.12,0.54) (0.23,0.77) (0.63,0.18, 0.1,0.09) (0.33,0.33,0.34) (0.39,0.29,0.32) (0.09,0.86,0.05)	(14,15,16,17,18)	0,8996	0,1004	0,0193	42,3945	230	8024	0,1004	0,5026	68832,01
13	(2 9 3 3 2 2)	(0.31,0.69) (0.06,0.32,0.15,0.19,0.05,0.06,0.07,0.05,0.05) (0.28,0.43,0.29) (0.51,0.41,0.08) (0.49,0.51) (0.07,0.93)	(10,14,17,18)	0,9856	0,0144	0,0313	110,7012	229	8003	0,0144	0,5102	93509,03
14	**(2 3 7 4 3 2)**	**(0.66,0.34)** **(0.18,0.13,0.69)** **(0.14,0.14,0.14,0.14,0.14,0.15,0.15)** **(0.2,0.27,0.27,0.26)** **(0.33,0.33,0.34)** **(0.94,0.06)**	**(1,12,14,18)**	**0,8738**	**0,1262**	**0,0219**	54,4103	228	8022	0,1262	0,5115	82836,02
15	**(3 9 9 6 3 3)**	**(0.26,0.55,0.19)** **(0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12)** **(0.1, 0.1, 0.1, 0.1, 0.1, 0.1,0.11,0.17,0.12)** **(0.15,0.44,0.11, 0.1, 0.1, 0.1)** **(0.33,0.33,0.34)** **(0.06,0.17,0.77)**	**(7,12,18)**	**0,8717**	**0,1283**	**0,0439**	218,0389	231	8023	0,1283	0,5068	127932,6
16	**(6 3 4 3 5 3)**	**(0.11,0.14,0.15,0.32,0.13,0.15)** **(0.51,0.26,0.23)** **(0.2,0.24,0.26, 0.3)** **(0.46,0.26,0.28)** **(0.2,0.25,0.21,0.13,0.21)** **(0.05,0.65, 0.3)**	**(7,14,16,18)**	**0,8598**	**0,1402**	**0,0195**	43,0473	230	8023	0,1402	0,5078	85034,24
17	(9 3 2 8 3 2)	(0.17,0.11, 0.1,0.11, 0.1, 0.1, 0.1, 0.1,0.11) (0.33,0.33,0.34) (0.83,0.17) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.57, 0.2,0.23) (0.95,0.05)	(12,15,17,18)	0,8864	0,1136	0,038	163,7093	230	8007	0,1136	0,504	147524,51
18	(3 3 9 3 8 2)	(0.39,0.33,0.28) (0.47,0.44,0.09) (0.07,0.09, 0.1,0.08, 0.1,0.25,0.08,0.13, 0.1) (0.38,0.35,0.27) (0.12,0.13,0.13,0.06,0.14,0.14,0.14,0.14) (0.95,0.05)	(6,12,18)	0,8745	0,1255	0,0577	377,6106	231	8023	0,1255	0,5125	140427,29
19	(8 2 2 2 2 2)	(0.11,0.24,0.11, 0.1,0.11,0.11,0.11,0.11) (0.29,0.71) (0.58,0.42) (0.19,0.81) (0.74,0.26) (0.94,0.06)	(12,14,17,18)	0,8672	0,1328	0,0416	196,1777	229	8015	0,1328	0,5149	118580,61
20	(8 6 2 9 2 2)	(0.16,0.05,0.11,0.05,0.05,0.19,0.05,0.34) (0.16,0.16,0.17,0.17,0.18,0.16) (0.78,0.22) (0.08,0.16,0.09, 0.2,0.09,0.09,0.09,0.09,0.11) (0.67,0.33) (0.95,0.05)	(12,15,17,18)	0,8933	0,1067	0,0405	185,601	230	8038	0,1067	0,5129	134761,82
21	(8 9 3 2 3 2)	(0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.11,0.11,0.14,0.11,0.11,0.14,0.09,0.09, 0.1) (0.45,0.29,0.26) (0.5, 0.5) (0.24,0.26, 0.5) (0.09,0.91)	(4,14,16,17,18)	0,9858	0,0142	0,0299	101,1088	229	8005	0,0142	0,5117	147924,29
		(0.18,0.41,0.41)										

22	**(3 3 5 3 3 3)**	**(0.18,0.42, 0.4)** **(0.2, 0.2, 0.2, 0.2, 0.2)** **(0.33,0.33,0.34)** **(0.18,0.77,0.05)** **(0.07,0.11,0.82)**	**(7,12,18)**	**0,8555**	**0,1445**	**0,0203**	46,5274	228	8017	0,1445	0,5069	81880,7
23	(8 5 8 4 3 3)	(0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.2, 0.2, 0.2, 0.2, 0.2) (0.21,0.14,0.16,0.13,0.12, 0.1,0.09,0.05) (0.22,0.36,0.22, 0.2) (0.39,0.29,0.32) (0.05,0.87,0.08)	(15,16,17,18)	0,8763	0,1237	0,0222	55,8544	229	8036	0,1237	0,5139	143421,77
24	(7 9 9 3 9 2)	(0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.23,0.13,0.22,0.13,0.07,0.05,0.06,0.05,0.06) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.37,0.34,0.29) (0.07,0.06,0.16,0.08,0.25,0.06,0.06,0.13,0.13) (0.09,0.91)	(5,14,18)	0,9835	0,0165	0,0297	99,811	230	8022	0,0165	0,5149	253223,64
25	**(3 3 8 5 8 2)**	**(0.58,0.12, 0.3)** **(0.05,0.06,0.89)** **(0.05, 0.1,0.05,0.05,0.05,0.19, 0.2,0.31)** **(0.26,0.19,0.22,0.17,0.16)** **(0.1,0.16, 0.1, 0.1,0.11,0.12,0.13,0.18)** **(0.94,0.06)**	**(7,12,14,18)**	**0,8777**	**0,1223**	**0,0227**	58,1021	230	8001	0,1223	0,512	156298,55
26	(5 8 2 8 9 2)	(0.2, 0.2, 0.2, 0.2, 0.2) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.76,0.24) (0.08,0.08,0.24,0.08, 0.1, 0.1, 0.1,0.22) (0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.2) (0.93,0.07)	(12,15,18)	0,8563	0,1437	0,0345	134,478	228	8008	0,1437	0,5168	171126,85
27	**(9 7 3 3 2 2)**	**(0.09, 0.1, 0.2, 0.1,0.12, 0.1, 0.1,0.09, 0.1)** **(0.05,0.32,0.14,0.07,0.26,0.05,0.11)** **(0.33,0.33,0.34)** **(0.37,0.37,0.26)** **(0.76,0.24)** **(0.67,0.33)**	**(7,12,18)**	**0,8477**	**0,1523**	**0,0292**	96,5196	229	8026	0,1523	0,5016	102224,76
28	**(3 4 3 6 3 2)**	**(0.62, 0.1,0.28)** **(0.25,0.25,0.25,0.25)** **(0.62,0.18, 0.2)** **(0.22,0.22,0.06,0.08,0.21,0.21)** **(0.33,0.33,0.34)** **(0.94,0.06)**	**(12,13,18)**	**0,8721**	**0,1279**	**0,0268**	81,5634	230	8020	0,1279	0,5091	98634,81
29	(7 5 7 4 2 2)	(0.14,0.08,0.22,0.21,0.18,0.08,0.09) (0.2,0.22, 0.2, 0.2,0.18) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.22,0.27,0.26,0.25) (0.35,0.65) (0.08,0.92)	(5,14,16,17,18)	0,9849	0,0151	0,0289	94,6522	231	8033	0,0151	0,5068	99875,39
30	**(2 2 2 5 4 2)**	**(0.6, 0.4)** **(0.5, 0.5)** **(0.75,0.25)** **(0.2, 0.2, 0.2, 0.2, 0.2)** **(0.25,0.25,0.25,0.25)** **(0.91,0.09)**	**(1,12,15,18)**	**0,857**	**0,143**	**0,0234**	62,0755	229	8033	0,143	0,4999	74821,24

Tabla A.D.2.1: Resultados de granularidad y proporciones de datos (distribución de landmarks). Concentración Local Máxima de Ozono en Mexico usando el error de predicción del último 25% de datos del conjunto de datos de training como función de costo (FCMSEtrain) (1000 evaluaciones). Mes Enero

# Ejec.	Granularidad	Proporción de los datos	Opt. Mask	Q	FCRMStrain (%)	FCMSEtrain (%)	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(6 3 5 2 9 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.68,0.27,0.05) (0.2, 0.2, 0.2, 0.2, 0.2) (0.3, 0.7) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	28	1011	43,1024	511,5482	19460,44
2	(6 5 2 7 2 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.2,0.05,0.42,0.26,0.07) (0.6, 0.4) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.67,0.33) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	27	1013	43,1024	511,5482	19034,71
3	(7 8 4 9 3 3)	(0.15,0.15,0.15,0.15,0.15,0.15, 0.1) (0.06, 0.2,0.08,0.05,0.22,0.06,0.27,0.06) (0.25,0.25,0.25,0.25) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.33,0.33,0.34) (0.33,0.33,0.34)	(1,12,18)	0,6367	0,0177	42,9772	0,0215	52,2812	28	1017	42,9772	511,5482	20096,88
4	(6 5 2 4 2 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.2, 0.2, 0.2, 0.2, 0.2) (0.17,0.83) (0.25,0.25,0.25,0.25) (0.53,0.47) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	28	1027	43,1024	1074,292	17737,03
5	(2 2 7 4 2 2)	(0.75,0.25) (0.5, 0.5) (0.06,0.07,0.15,0.19,0.26,0.05,0.22) (0.25,0.25,0.25,0.25) (0.67,0.33) (0.52,0.48)	(7,12,14,17,18)	0,6293	0,0171	39,9136	0,0206	48,2843	28	1015	39,9136	511,5482	11791,66
6	(6 2 5 3 3 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.5, 0.5) (0.2, 0.2, 0.2, 0.2, 0.2) (0.27,0.11,0.62) (0.33,0.33,0.34) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	28	1017	43,1024	511,5482	14140,11
7	(6 8 8 3 3 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.16,0.16,0.17,0.05,0.06,0.21,0.09, 0.1) (0.05,0.15,0.06,0.12,0.17,0.16,0.09, 0.2) (0.33,0.33,0.34) (0.33,0.33,0.34) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	27	1015	43,1024	546,3786	22290,11
8	(4 2 6 9 3 2)	(0.25,0.25,0.25,0.25) (0.5, 0.5) (0.09,0.23,0.05,0.32,0.05,0.26) (0.07,0.11, 0.2,0.06,0.05,0.06,0.16,0.15,0.14) (0.33,0.33,0.34) (0.87,0.13)	(8,13,17,18)	0,7808	0,0171	40,0559	0,017	32,7384	28	1019	40,0559	570,5662	21010,87
9	(6 8 2 3 8 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.5, 0.5) (0.14,0.73,0.13) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	28	1023	43,1024	511,5482	21479,19
10	(6 7 3 9 7 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.56,0.24, 0.2) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	28	1022	43,1024	511,5482	19160,41

11	(6 2 4 5 2 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.15,0.85) (0.52,0.07,0.36,0.05) (0.2, 0.2, 0.2, 0.2, 0.2) (0.5, 0.5) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	28	1012	43,1024	474,8513	14288,59
12	(6 3 2 3 3 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.5,0.39,0.11) (0.5, 0.5) (0.33,0.33,0.34) (0.33,0.33,0.34) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	28	1013	43,0127	511,5482	15408,6
13	(3 6 7 8 8 8)	(0.33,0.33,0.34) (0.17, 0.1,0.25,0.21,0.07, 0.2) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.05,0.05,0.23, 0.1,0.28,0.14,0.09,0.06) (0.21,0.05,0.05,0.05,0.11,0.11, 0.3,0.12) (0.07,0.15,0.05,0.13,0.05,0.13,0.19,0.23)	(1,12,18)	0,5465	0,018	44,8433	0,0188	39,9396	28	1012	44,8433	515,352	19833,01
14	(6 9 9 6 2 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.18,0.19,0.08,0.09,0.09,0.09,0.09,0.09, 0.1) (0.22,0.24,0.06,0.06,0.12, 0.3) (0.5, 0.5) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	28	1017	43,1024	555,7781	20730,48
15	(9 6 5 6 8 3)	(0.05,0.05,0.15,0.05,0.15,0.05,0.25,0.17,0.08) (0.16,0.16,0.17,0.17,0.17,0.17) (0.2, 0.2, 0.2, 0.2, 0.2) (0.16,0.16,0.17,0.17,0.17,0.17) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.33,0.33,0.34)	(1,12,18)	0,603	0,0177	43,0376	0,0215	52,2847	28	1010	43,0376	552,6901	20860,64
16	(6 8 7 9 4 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.06,0.09,0.08, 0.1,0.14,0.19,0.12,0.06,0.16) (0.25,0.25,0.25,0.25) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	28	1010	43,1024	700,4751	18303,5
17	(6 4 3 6 9 3)	(0.15,0.15,0.16,0.16,0.23,0.15) (0.25,0.25,0.25,0.25) (0.33,0.33,0.34) (0.16,0.16,0.17,0.17,0.17,0.17) (0.13,0.07,0.05,0.06,0.17,0.17,0.15,0.05,0.15) (0.33,0.33,0.34)	(1,12,18)	0,6365	0,0177	43,0696	0,0216	53,0312	28	1026	43,0696	555,7223	20220,75
18	(2 5 2 3 3 3)	(0.46,0.54) (0.27,0.06,0.26,0.06,0.35) (0.5, 0.5) (0.11,0.52,0.37) (0.34, 0.1,0.56) (0.29,0.16,0.55)	(3,12,15,18)	0,6025	0,0166	38,0939	0,0217	53,4035	27	1010	38,0939	514,5268	18622,43
19	(2 4 2 2 4 4)	(0.5, 0.5) (0.66,0.13,0.05,0.16) (0.5, 0.5) (0.67,0.33) (0.31,0.17,0.16,0.36) (0.08,0.39,0.09,0.44)	(1,12,15,16,18)	0,6006	0,0168	38,8084	0,019	40,9168	28	1021	38,8084	520,5948	16690,13
20	(2 4 4 2 4 4)	(0.71,0.29) (0.32,0.09,0.31,0.28) (0.58,0.14,0.07,0.21) (0.76,0.24) (0.32,0.06,0.57,0.05) (0.51,0.18,0.11, 0.2)	(10,12,13,16,18)	0,6587	0,0172	40,5973	0,0181	37,2322	27	1004	40,5973	675,5975	13873,39
21	(4 4 7 2 2 2)	(0.2,0.18,0.36,0.26) (0.05,0.32,0.43, 0.2) (0.22,0.12,0.25,0.11,0.05, 0.2,0.05) (0.68,0.32) (0.46,0.54) (0.42,0.58) (0.58,0.42)	(4,12,13,16,18)	0,6945	0,0168	39,0489	0,0182	37,4214	29	1033	39,0489	511,5482	13847,3

22	(2 2 6 7 2 2)	(0.57,0.43) (0.16,0.16,0.17,0.17,0.17,0.17) (0.05,0.37,0.07, 0.1,0.05,0.07,0.29) (0.5, 0.5) (0.5, 0.5)	(1,12,14,17,18)	0,569	0,0175	41,7515	0,0205	47,6519	28	1028	41,7515	511,5482	13026,94
23	(6 9 3 3 6 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.05,0.19, 0.1,0.09,0.13,0.05,0.08,0.13,0.18) (0.61,0.18,0.21) (0.05,0.36,0.59) (0.05,0.54,0.05,0.26,0.05,0.05) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	28	1015	43,1024	511,5482	17898,61
24	(8 6 2 8 2 2)	(0.09,0.21,0.17,0.06,0.11,0.26,0.05,0.05) (0.25,0.13,0.15,0.14, 0.2,0.13) (0.74,0.26) (0.11,0.09,0.09,0.09,0.28,0.14,0.12,0.08) (0.64,0.36) (0.73,0.27)	(3,12,15,17,18)	0,7258	0,0173	41,0742	0,0223	56,3346	28	1013	41,0742	408,4338	14675,76
25	(6 7 4 4 3 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.19,0.16,0.08,0.15,0.17,0.11,0.14) (0.4,0.12,0.37,0.11) (0.25,0.25,0.25,0.25) (0.33,0.33,0.34) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	28	1024	43,1024	569,0963	15108,83
26	(7 4 6 4 2 4)	(0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.29,0.25,0.18,0.28) (0.06,0.09,0.28,0.33, 0.1,0.14) (0.28,0.32,0.05,0.35) (0.27,0.73) (0.35,0.15,0.16,0.34)	(1,12,18)	0,5616	0,0179	43,9922	0,0191	41,2524	28	1034	43,9922	474,9815	16147,04
27	(6 7 2 5 8 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.09,0.25, 0.1, 0.2,0.11,0.06,0.19) (0.83,0.17) (0.2, 0.2, 0.2, 0.2, 0.2) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	28	1035	43,1024	534,1186	18625,35
28	(6 9 4 5 3 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.25,0.25,0.25,0.25) (0.05, 0.2, 0.4,0.21,0.14) (0.33,0.33,0.34) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	28	1026	43,1024	16423,01	17547,43
29	(9 9 4 3 2 2)	(0.08,0.06,0.16,0.06,0.21,0.05,0.12,0.13,0.13) (0.08,0.05,0.07,0.43,0.05,0.05,0.05, 0.1,0.12) (0.12,0.16,0.24,0.48) (0.33,0.33,0.34) (0.18,0.82) (0.5, 0.5)	(1,12,18)	0,6444	0,0177	42,9731	0,0219	54,1952	28	1035	42,9731	511,5482	21403,21
30	(3 4 5 5 4 6)	(0.33,0.33,0.34) (0.25,0.25,0.25,0.25) (0.2, 0.2, 0.2, 0.2, 0.2) (0.15,0.26,0.06, 0.4,0.13) (0.31,0.05,0.26,0.38) (0.34, 0.1,0.13,0.05,0.05,0.33)	(1,12,18)	0,6548	0,0176	42,5708	0,023	60,0006	28	1031	42,5708	569,0963	17307,82

Tabla A.D.2.2: Resultados de granularidad y proporciones de datos (distribución de landmarks). Concentración Local Máxima de Ozono en Mexico usando el error de predicción del último 25% de datos del conjunto de datos de training como función de costo (FCMSEtrain) (2000 evaluaciones). Mes Enero

# Ejec.	Granularidad	Proporción de los datos	Opt. Mask	Q	FCRMStrain (%)	FCMSEtrain (%)	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(7 4 5 5 2 3)	(0.06,0.05, 0.2,0.16,0.11,0.28,0.14) (0.18,0.19,0.22,0.41) (0.05,0.17,0.68,0.05,0.05) (0.2, 0.2, 0.2, 0.2, 0.2) (0.5, 0.5) (0.33,0.33,0.34)	(1,12,18)	0,6201	0,0177	43,091	0,0216	53,0206	57	2013	43,091	514,174	43414,66
2	(2 5 2 2 4 3)	(0.7, 0.3) (0.2, 0.2, 0.2, 0.2, 0.2) (0.75,0.25) (0.5, 0.5) (0.25,0.25,0.25,0.25) (0.72,0.09,0.19)	(4,7,12,16,18)	0,7752	0,0162	36,2332	0,0198	44,2181	57	2030	36,2332	508,2123	25786,91
3	(5 5 2 7 4 3)	(0.15,0.15,0.14,0.43,0.13) (0.16,0.36,0.16,0.16,0.16) (0.5, 0.5) (0.07,0.34,0.06,0.27,0.16,0.05,0.05) (0.25,0.25,0.25,0.25) (0.33,0.33,0.34)	(1,12,18)	0,6505	0,0177	43,0374	0,0215	52,1763	56	2009	43,0374	511,5482	40656,25
4	(2 2 2 2 6 3)	(0.7, 0.3) (0.5, 0.5) (0.5, 0.5) (0.5, 0.5) (0.16,0.16,0.17,0.17,0.17,0.17) (0.68,0.14,0.18)	(7,10,12,16,18)	0,7504	0,0152	31,991	0,0199	44,664	57	2028	31,991	551,8085	29657,12
5	(6 2 8 2 2 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.5, 0.5) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.42,0.58) (0.31,0.69) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	57	2013	43,1024	569,0963	29179,35
6	(8 3 2 3 3 3)	(0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.17,0.14,0.69) (0.35,0.65) (0.43,0.11,0.46) (0.44,0.27,0.29) (0.36, 0.1,0.54)	(3,12,15,18)	0,6386	0,0168	38,8612	0,0204	47,2677	57	2017	38,8612	356,0379	27130,06
7	(2 2 3 3 4 2)	(0.57,0.43) (0.17,0.83) (0.22,0.38, 0.4) (0.05,0.43,0.52) (0.25,0.25,0.25,0.25) (0.79,0.21)	(1,12,14,17,18)	0,7643	0,0177	42,7865	0,0184	38,4124	57	2031	42,7865	536,9901	21003,03
8	(6 3 4 6 4 2)	(0.07,0.27, 0.4,0.05,0.16,0.05) (0.33,0.33,0.34) (0.25,0.25,0.25,0.25) (0.16,0.16,0.17,0.17,0.17,0.17) (0.37,0.16, 0.3,0.17) (0.65,0.35)	(1,12,18)	0,7926	0,0177	43,029	0,0218	53,8922	56	2020	43,029	16423,01	25081,05
9	(6 3 6 2 2 3)	(0.15,0.15,0.15,0.15,0.25,0.15) (0.33,0.33,0.34) (0.16,0.16,0.17,0.17,0.17,0.17) (0.61,0.39) (0.88,0.12) (0.33,0.33,0.34)	(1,12,18)	0,6379	0,0177	42,9913	0,0215	52,2287	56	2008	42,9913	565,3236	23939,71
10	(6 3 3 5 6 3)	(0.15,0.15,0.16,0.16,0.23,0.15) (0.44,0.17,0.39) (0.33,0.33,0.34) (0.13,0.44,0.14,0.14,0.15) (0.16,0.16,0.17,0.17,0.17,0.17) (0.33,0.33,0.34)	(1,12,18)	0,6365	0,0177	43,0696	0,0216	53,0312	56	2005	43,0696	570,821	30576,52

11	(2 6 2 2 3 3)	(0.74,0.26) (0.05,0.25,0.09,0.27,0.07,0.27) (0.5, 0.5) (0.5, 0.5) (0.09,0.31, 0.6) (0.71,0.13,0.16)	(4,12,13,16,18)	0,7622	0,0152	31,8716	0,019	41,0505	57	2005	31,8716	517,5726	24759,9
12	(2 2 2 3 2 2)	(0.77,0.23) (0.5, 0.5) (0.35,0.65) (0.34, 0.4,0.26) (0.69,0.31) (0.67,0.33)	(12,13,14,17,18)	0,7456	0,017	39,6436	0,0201	45,5329	57	2028	39,6436	16423,01	21645,48
13	(6 3 9 9 2 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.33,0.33,0.34) (0.2,0.14,0.05,0.17,0.05,0.06,0.22,0.05,0.06) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.68,0.32) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	56	2005	43,1024	555,0697	41484,4
14	(2 2 6 8 2 2)	(0.83,0.17) (0.4, 0.6) (0.16,0.16,0.17,0.17,0.17,0.17) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.66,0.34) (0.63,0.37)	(12,13,14,17,18)	0,7197	0,0169	39,1828	0,0211	50,5923	56	2008	39,1828	551,7081	27287,19
15	(8 8 5 7 6 2)	(0.06,0.21,0.05,0.05,0.06,0.12, 0.2,0.25) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.2, 0.2, 0.2, 0.2, 0.2) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.14,0.26,0.15,0.15,0.15,0.15) (0.5, 0.5)	(1,12,18)	0,6505	0,0177	43,0493	0,0226	57,799	56	2018	43,0493	540,6238	46614,3
16	(6 6 9 3 5 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.16,0.16,0.17,0.17,0.17,0.17) (0.08,0.08,0.08,0.06,0.06,0.16,0.07,0.27,0.14) (0.37,0.23, 0.4) (0.2, 0.2, 0.2, 0.2, 0.2) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	57	2001	43,1024	532,5399	44520,88
17	(9 8 7 3 9 2)	(0.12,0.14,0.05,0.05,0.19,0.05,0.13,0.06,0.21) (0.11,0.11,0.11,0.11,0.12,0.19,0.12,0.13) (0.13,0.13,0.12,0.12,0.24,0.13,0.13) (0.33,0.33,0.34) (0.13,0.16,0.08,0.08,0.08,0.08,0.09,0.17,0.13) (0.5, 0.5)	(1,12,18)	0,6469	0,0177	42,9673	0,0219	54,1847	57	2017	42,9673	16423,01	54999,69
18	(2 3 4 2 5 5)	(0.66,0.34) (0.33,0.33,0.34) (0.25,0.25,0.25,0.25) (0.53,0.47) (0.23,0.09,0.22,0.25,0.21) (0.38,0.33, 0.1,0.05,0.14)	(1,4,12,16,18)	0,6464	0,0154	32,7637	0,0209	49,2602	57	2009	32,7637	511,5482	18315,46
19	(3 3 7 2 5 5)	(0.31,0.31,0.38) (0.33,0.33,0.34) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.5, 0.5) (0.41,0.05,0.05,0.39, 0.1) (0.07,0.34,0.18,0.21, 0.2)	(1,10,12,16,18)	0,6093	0,0169	39,5302	0,018	36,6427	56	2020	39,5302	16423,01	30016,34
20	(5 9 8 8 3 3)	(0.14,0.16,0.16,0.16,0.38) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.1,0.17,0.12,0.17,0.08,0.08,0.21,0.07) (0.33,0.33,0.34) (0.33,0.33,0.34)	(1,12,18)	0,6293	0,0177	43,0698	0,0216	53,0421	57	2032	43,0698	503,4662	33541,65
21	(6 8 5 9 4 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.16,0.26,0.17,0.12,0.08,0.06,0.09,0.06) (0.2, 0.2, 0.2, 0.2, 0.2) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.25,0.25,0.25,0.25) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	56	2022	43,1024	570,5662	40169,21
		(0.33,0.33,0.34)											

22	(3 9 3 6 6 6)	(0.11,0.06,0.05,0.15,0.18,0.05,0.05,0.14,0.21) (0.28, 0.3,0.42) (0.06,0.08, 0.4,0.08,0.28, 0.1) (0.31,0.27,0.25,0.05,0.07,0.05) (0.26,0.14,0.12,0.23,0.12,0.13)	(1,12,18)	0,528	0,0169	39,5959	0,0186	39,0359	56	2004	39,5959	511,5482	37422,29
23	(2 2 4 2 2 2)	(0.75,0.25) (0.5, 0.5) (0.25,0.25,0.25,0.25) (0.49,0.51) (0.79,0.21) (0.68,0.32)	(12,13,14,17,18)	0,756	0,0169	38,921	0,0204	47,3167	56	2021	36,3561	414,5534	20683,27
24	(2 4 2 4 2 2)	(0.23,0.77) (0.33,0.21,0.38,0.08) (0.46,0.54) (0.25,0.25,0.25,0.25) (0.33,0.67) (0.44,0.56)	(3,12,15,16,18)	0,6026	0,0156	33,4567	0,022	55,0327	57	2017	33,4567	511,5482	24867,62
25	(3 5 3 3 4 8)	(0.33,0.33,0.34) (0.06,0.23,0.13,0.06,0.52) (0.16, 0.7,0.14) (0.39,0.37,0.24) (0.09,0.39,0.46,0.06) (0.29,0.11,0.05,0.05,0.05,0.18,0.19,0.08)	(1,12,18)	0,5673	0,0176	42,5293	0,021	50,1728	57	2032	42,5293	16423,01	26229,22
26	(4 5 6 2 3 2)	(0.25,0.25,0.25,0.25) (0.18,0.07, 0.3,0.13,0.32) (0.19,0.06, 0.6,0.05,0.05,0.05) (0.45,0.55) (0.33,0.33,0.34) (0.83,0.17)	(8,13,17,18)	0,7545	0,0176	42,5093	0,0169	32,3472	57	2032	42,4935	559,5189	27780,05
27	(6 5 6 4 6 2)	(0.15,0.15,0.05,0.13,0.13,0.39) (0.17,0.18,0.33,0.24,0.08) (0.13,0.05,0.11,0.21,0.35,0.15) (0.25,0.25,0.25,0.25) (0.16,0.16,0.17,0.17,0.17,0.17) (0.5, 0.5)	(1,12,18)	0,6162	0,0177	43,0967	0,0219	54,1716	56	2009	43,0967	573,0678	32057,26
28	(7 7 8 7 9 3)	(0.05,0.05,0.22,0.15,0.28,0.19,0.06) (0.1,0.11,0.16,0.19,0.13,0.17,0.14) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.24,0.05,0.06,0.08,0.17,0.19,0.21) (0.1,0.16,0.16,0.06,0.06,0.16,0.12, 0.1,0.08) (0.33,0.33,0.34)	(1,12,18)	0,6408	0,0177	43,1005	0,0216	52,9537	57	2025	43,1005	648,8659	42074,78
29	(6 4 4 5 4 3)	(0.1,0.23,0.11,0.18,0.33,0.05) (0.07,0.46,0.26,0.21) (0.25,0.25,0.25,0.25) (0.3,0.18,0.18,0.17,0.17) (0.31, 0.1, 0.3,0.29) (0.33,0.33,0.34)	(1,12,18)	0,6387	0,0177	43,0211	0,0215	52,1924	56	2005	43,0211	511,5482	33020,02
30	(6 5 5 2 7 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.05,0.17,0.34,0.05,0.39) (0.2, 0.2, 0.2, 0.2, 0.2) (0.36,0.64) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	57	2015	43,1024	598,6698	41195,63

Tabla A.D.2.3: Resultados de granularidad y proporciones de datos (distribución de landmarks). Concentración Local Máxima de Ozono en Mexico usando el error de predicción del último 25% de datos del conjunto de datos de training como función de costo (FCMSEtrain) (4000 evaluaciones). Mes Enero

# Ejec.	Granularidad	Proporción de los datos	Opt. Mask	Q	FCRMStrain (%)	FCMSEtrain (%)	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(3 7 5 5 3 3)	(0.33,0.33,0.34) (0.12,0.12,0.12,0.25,0.12,0.13,0.14) (0.2, 0.2, 0.2, 0.2, 0.2) (0.09,0.05,0.44,0.05,0.37) (0.22,0.19,0.59) (0.41,0.24,0.35)	(1,12,18)	0,7051	0,0176	42,6953	0,0224	56,9911	115	4030	42,6953	570,5662	63718,07
2	(3 7 3 2 5 3)	(0.33,0.33,0.34) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.15,0.18,0.67) (0.65,0.35) (0.45,0.06,0.17,0.17,0.15) (0.07,0.49,0.44)	(1,4,12,16,18)	0,7134	0,0168	38,9374	0,0185	38,7236	114	4018	38,9374	842,2868	40162,14
3	(3 8 5 9 4 3)	(0.36,0.48,0.16) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.17,0.31,0.17,0.17,0.18) (0.05,0.21,0.19,0.21,0.05,0.05, 0.1,0.05,0.09) (0.31,0.36,0.09,0.24) (0.33,0.33,0.34)	(12,13,17,18)	0,6371	0,0176	42,4881	0,0197	43,8877	114	4024	42,4881	16423,01	59895,05
4	(2 7 3 5 3 6)	(0.72,0.28) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.28,0.45,0.27) (0.24,0.15,0.19, 0.3,0.12) (0.33,0.33,0.34) (0.09,0.34,0.09,0.22,0.18,0.08)	(12,13,17,18)	0,5938	0,0163	36,4809	0,0187	39,7726	115	4013	36,4809	16423,01	38049,59
5	(6 8 8 2 3 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.09,0.05,0.19,0.13,0.25,0.16,0.07,0.06) (0.11,0.11,0.11,0.23,0.11,0.11,0.11,0.11) (0.72,0.28) (0.61,0.07,0.32) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	114	4013	43,1024	16423,01	57601,01
6	(6 3 2 3 2 3)	(0.15,0.15,0.16,0.16,0.21,0.17) (0.4, 0.3, 0.3) (0.54,0.46) (0.33,0.33,0.34) (0.17,0.83) (0.33,0.33,0.34)	(1,12,18)	0,6361	0,0177	43,0561	0,0216	53,0449	114	4007	43,0561	556,7336	54907,53
7	(6 2 9 2 3 3)	(0.15,0.15,0.16,0.16,0.22,0.16) (0.59,0.41) (0.06,0.19,0.18,0.05,0.18,0.05,0.14,0.06,0.09) (0.5, 0.5) (0.33,0.33,0.34) (0.33,0.33,0.34)	(1,12,18)	0,6365	0,0177	43,0696	0,0216	53,0312	114	4007	43,0696	511,5482	56476,52
8	(6 2 5 6 8 3)	(0.15,0.15,0.16,0.16,0.21,0.17) (0.5, 0.5) (0.19,0.22,0.24,0.19,0.16) (0.16,0.16,0.17,0.17,0.17,0.17) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.33,0.33,0.34)	(1,12,18)	0,6361	0,0177	43,0561	0,0216	53,0449	114	4023	43,0561	500,6514	91998,67
9	(6 2 6 3 8 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.48,0.52) (0.16,0.16,0.17,0.17,0.17,0.17) (0.33,0.33,0.34) (0.11,0.19,0.12,0.12,0.07,0.13,0.13,0.13) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	114	4011	43,1024	570,5662	91867,01
10	(3 2 8 2 4 2)	(0.33,0.33,0.34) (0.73,0.27) (0.11,0.25, 0.1, 0.1,0.11,0.11,0.11,0.11) (0.76,0.24) (0.25,0.25,0.25,0.25) (0.56,0.44)	(1,4,12,16,18)	0,7379	0,0171	40,2915	0,0178	36,0657	114	4031	40,2915	506,99	33855,3

11	(7 7 2 3 2 3)	(0.16,0.16,0.16,0.08,0.06,0.19,0.19) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.5, 0.5) (0.24,0.35,0.41) (0.62,0.38) (0.33,0.33,0.34)	(1,12,18)	0,5987	0,0176	42,906	0,0216	53,0449	114	4021	42,906	16423,01	63276,9
12	(6 3 8 3 4 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.39, 0.3,0.31) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.38,0.22, 0.4) (0.25,0.25,0.25,0.25) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	114	4033	43,1024	511,5482	71847,6
13	(7 5 6 4 6 3)	(0.11,0.19,0.14,0.05,0.29,0.16,0.06) (0.2, 0.2, 0.2, 0.2, 0.2) (0.16,0.16,0.17,0.17,0.17,0.17) (0.25,0.25,0.25,0.25) (0.16,0.16,0.17,0.17,0.17,0.17) (0.33,0.33,0.34)	(1,12,18)	0,6131	0,0177	43,0358	0,0215	52,2838	114	4013	43,0358	511,5482	87928,09
14	(6 4 4 7 3 3)	(0.15,0.15,0.16,0.16,0.23,0.15) (0.25,0.25,0.25,0.25) (0.25,0.25,0.25,0.25) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.2,0.19,0.61) (0.33,0.33,0.34)	(1,12,18)	0,6365	0,0177	43,0696	0,0216	53,0312	114	4015	43,0696	591,6629	89639,93
15	(6 2 7 7 6 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.28,0.72) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.16,0.16,0.17,0.17,0.17,0.17) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	114	4028	43,1024	16423,01	91450,11
16	(9 2 7 6 2 4)	(0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.59,0.41) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.16,0.16,0.17,0.17,0.17,0.17) (0.26,0.74) (0.07, 0.2,0.39,0.34)	(1,12,18)	0,6031	0,0176	42,6786	0,0218	53,5928	114	4024	42,6786	489,2457	72809,7
17	(6 2 7 5 3 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.45,0.55) (0.21,0.13,0.13,0.13,0.13,0.14,0.13) (0.19,0.19,0.19,0.19,0.24) (0.28,0.29,0.43) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	113	4010	43,1024	511,5482	48775,86
18	(3 2 4 2 7 5)	(0.41, 0.3,0.29) (0.69,0.31) (0.25,0.25,0.25,0.25) (0.55,0.45) (0.1,0.05,0.39,0.07, 0.2,0.09, 0.1) (0.05,0.45,0.17,0.23, 0.1)	(4,12,13,16,18)	0,5999	0,0158	34,4734	0,0182	37,6332	114	4006	34,4734	592,0933	41943,56
19	(6 2 6 8 6 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.42,0.58) (0.16,0.16,0.17,0.17,0.17,0.17) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.16,0.16,0.17,0.17,0.17,0.17) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	115	4029	43,1024	517,5726	66086,72
20	(6 7 3 5 8 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.08,0.08,0.28,0.17,0.09, 0.1, 0.2) (0.21,0.19, 0.6) (0.2, 0.2, 0.2, 0.2, 0.2) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	114	4004	43,1024	520,1942	93302,32
21	(2 3 2 8 3 3)	(0.09,0.91) (0.14,0.68,0.18) (0.45,0.55) (0.12,0.12,0.12,0.15,0.13,0.13,0.12,0.11) (0.41,0.47,0.12) (0.08,0.41,0.51) (0.41,0.59)	(3,12,15,18)	0,5615	0,0148	29,9797	0,0224	56,7657	114	4007	29,9797	526,9552	36696,01

22	(2 8 3 2 5 3)	(0.1, 0.1, 0.1, 0.1, 0.2, 0.1,0.09,0.21) (0.44,0.11,0.45) (0.35,0.65) (0.48,0.11,0.13,0.14,0.14) (0.42,0.15,0.43)	(1,12,13,18)	0,638	0,0176	42,7949	0,0211	50,2851	115	4032	42,7949	16423,01	46890,92
23	(8 3 8 9 2 3)	(0.11,0.24,0.11,0.12,0.11,0.11, 0.1, 0.1) (0.12,0.22,0.66) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.5, 0.5) (0.48,0.09,0.43)	(7,12,18)	0,6139	0,0188	48,9213	0,0236	62,9617	114	4035	48,9213	529,5202	86569,48
24	(2 6 7 4 3 3)	(0.71,0.29) (0.28,0.07,0.33, 0.2,0.05,0.07) (0.14,0.14,0.14,0.14,0.14,0.16,0.14) (0.2,0.21,0.21,0.38) (0.2,0.61,0.19) (0.33,0.33,0.34)	(7,12,17,18)	0,6238	0,0176	42,536	0,0197	44,1054	114	4032	42,536	524,6771	65530,11
25	(3 4 4 2 3 2)	(0.33,0.33,0.34) (0.37,0.32,0.16,0.15) (0.26,0.25,0.24,0.25) (0.75,0.25) (0.66,0.16,0.18) (0.53,0.47)	(1,4,12,16,18)	0,7141	0,0172	40,5327	0,0176	35,1908	115	4009	40,5327	16423,01	29329,36
26	(6 3 7 4 6 3)	(0.15,0.15,0.16,0.16,0.23,0.15) (0.33,0.33,0.34) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.23,0.31,0.23,0.23) (0.16,0.16,0.17,0.17,0.17,0.17) (0.33,0.33,0.34)	(1,12,18)	0,6365	0,0177	43,0696	0,0216	53,0312	114	4022	43,0696	677,3091	61311,44
27	(6 3 3 4 5 3)	(0.15,0.15,0.16,0.16,0.16,0.22) (0.33,0.33,0.34) (0.33,0.33,0.34) (0.25,0.25,0.25,0.25) (0.16,0.16,0.37,0.16,0.15) (0.33,0.33,0.34)	(1,12,18)	0,6255	0,0177	43,0822	0,0216	52,9688	114	4025	43,0822	511,5482	47461,13
28	(2 2 8 2 3 2)	(0.58,0.42) (0.44,0.56) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.57,0.43) (0.5,0.24,0.26) (0.39,0.61)	(7,12,14,17,18)	0,6215	0,0171	39,8921	0,0241	66,0079	114	4035	39,8921	511,5482	30368,66
29	(2 3 4 2 9 3)	(0.74,0.26) (0.7,0.13,0.17) (0.25,0.25,0.25,0.25) (0.5, 0.5) (0.1, 0.1, 0.1, 0.1,0.19, 0.1, 0.1, 0.1,0.11) (0.68,0.14,0.18)	(10,12,13,16,18)	0,7485	0,0138	26,201	0,0197	44,0036	114	4012	26,201	16423,01	66700,79
30	(3 5 3 2 9 9)	(0.33,0.33,0.34) (0.13,0.45,0.14,0.14,0.14) (0.08,0.36,0.56) (0.36,0.64) (0.07,0.05,0.08,0.07,0.17,0.14,0.05,0.26,0.11) (0.22,0.21,0.07,0.09,0.05,0.05, 0.1,0.07,0.14)	(12,13,16,18)	0,533	0,0172	40,8159	0,0224	56,6805	113	4006	40,8159	16423,01	57614,19

Tabla A.D.2.4: Resultados de granularidad y proporciones de datos (distribución de landmarks). Concentración Local Máxima de Ozono en Mexico usando el error de predicción del último 25% de datos del conjunto de datos de training como función de costo (FCMSEtrain) (8000 evaluaciones). Mes Enero

# Ejec.	Granularidad	Proporción de los datos	Opt. Mask	Q	FCRMStrain (%)	FCMSEtrain (%)	RMStest (%)	MSEtest (%)	#Generac.	#Trials	Mejor	Peor	Tiempo (seg)
1	(6 6 5 9 7 3)	(0.16,0.16,0.11,0.16,0.16,0.25) (0.16,0.16,0.17,0.17,0.17,0.17) (0.2, 0.2, 0.2, 0.2, 0.2) (0.26, 0.1,0.07,0.07,0.08,0.07,0.12,0.07,0.16) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.33,0.33,0.34)	(1,12,18)	0,6218	0,0177	42,9653	0,0215	52,2944	230	8019	42,9653	534,476	129712,63
2	(7 5 4 7 3 3)	(0.14,0.18,0.12,0.12,0.18,0.13,0.13) (0.24,0.05,0.24,0.24,0.23) (0.31,0.29,0.11,0.29) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.33,0.33,0.34) (0.33,0.33,0.34)	(1,12,18)	0,6306	0,0177	42,9776	0,0215	52,2921	228	8017	42,9776	16423,01	177026,6
3	(6 8 6 3 6 3)	(0.15,0.15,0.16,0.16,0.21,0.17) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.24,0.08,0.09,0.09,0.36,0.14) (0.33,0.33,0.34) (0.16,0.16,0.17,0.17,0.17,0.17) (0.33,0.33,0.34)	(1,12,18)	0,6361	0,0177	43,0561	0,0216	53,0449	230	8015	43,0561	613,5319	145957,67
4	(3 7 4 4 3 9)	(0.33,0.33,0.34) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.25,0.25,0.25,0.25) (0.25,0.25,0.25,0.25) (0.33,0.33,0.34) (0.09,0.07,0.15,0.08,0.15,0.08,0.07,0.15,0.16)	(1,12,17,18)	0,5406	(*)	39,9232	NO PREDICE	NO PREDICE	228	8027	39,9232	575,7543	168417,99
5	(2 7 3 2 8 2)	(0.78,0.22) (0.11,0.32,0.11,0.11,0.11,0.12,0.12) (0.21,0.24,0.55) (0.73,0.27) (0.12,0.15,0.12,0.12,0.13,0.13,0.12,0.11) (0.68,0.32)	(4,12,13,16,18)	0,7516	0,0155	33,1212	0,0184	38,2302	230	8034	33,1212	511,5482	77946,23
6	(6 6 9 6 3 3)	(0.15,0.15,0.15,0.15,0.15,0.25) (0.09,0.38,0.09,0.09,0.07,0.28) (0.09,0.09, 0.2, 0.1,0.05, 0.1,0.18,0.09, 0.1) (0.16,0.16,0.17,0.17,0.17,0.17) (0.47,0.45,0.08) (0.33,0.33,0.34)	(1,12,18)	0,6268	0,0177	43,0257	0,0215	52,3001	229	8023	43,0257	16423,01	154536,94
7	(3 2 2 5 3 2)	(0.51,0.24,0.25) (0.5, 0.5) (0.39,0.61) (0.17,0.36,0.21,0.07,0.19) (0.32,0.37,0.31) (0.83,0.17)	(8,13,17,18)	0,7711	0,0167	38,0946	0,018	36,5266	230	8008	38,0946	583,095	73993,06
8	(2 2 4 7 2 2)	(0.75,0.25) (0.5, 0.5) (0.26,0.25,0.25,0.24) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.72,0.28) (0.49,0.51)	(7,12,14,17,18)	0,6143	0,0167	38,1187	0,0212	50,9763	231	8032	38,1187	16423,01	46660,45
9	(2 3 9 8 3 3)	(0.82,0.18) (0.46,0.27,0.27) (0.12,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11) (0.11,0.11,0.11,0.11,0.21,0.12,0.12,0.11) (0.38,0.31,0.31) (0.33,0.33,0.34)	(12,13,17,18)	0,6174	0,0171	40,1914	0,0197	43,7927	229	8004	40,1914	16423,01	100826,19
10	(6 6 3 5 2 3)	(0.15,0.15,0.15,0.15,0.25,0.15) (0.1,0.28,0.12,0.13,0.23,0.14) (0.53,0.24,0.23) (0.17,0.17,0.17,0.17,0.32) (0.5, 0.5) (0.33,0.33,0.34)	(1,12,18)	0,6379	0,0177	42,9913	0,0215	52,2287	230	8024	42,9913	520,8573	110118,47

11	(6 8 8 9 3 3)	(0.15,0.15,0.25,0.15,0.15,0.15) (0.12,0.12,0.12,0.14,0.13,0.13,0.12,0.12) (0.11,0.11,0.11,0.11,0.19,0.12,0.12,0.13) (0.11,0.11,0.12,0.12,0.12,0.12,0.05,0.12,0.13) (0.25,0.14,0.61) (0.33,0.33,0.34)	(1,12,18)	0,6572	0,0176	42,7956	0,0213	51,5803	229	8017	42,7956	856,8599	186343,82
12	(2 2 4 3 3 2)	(0.75,0.25) (0.26,0.74) (0.25,0.25,0.25,0.25) (0.33,0.34,0.33) (0.41,0.18,0.41) (0.5, 0.5)	(7,12,14,17,18)	0,6026	0,0164	37,0024	0,0228	58,9407	229	8034	37,0024	16423,01	53023,13
13	(8 2 9 3 4 3)	(0.14,0.18,0.11,0.12,0.05, 0.1,0.13,0.17) (0.81,0.19) (0.07,0.18,0.07,0.08,0.05, 0.1,0.12,0.13, 0.2) (0.33,0.33,0.34) (0.25,0.25,0.25,0.25) (0.33,0.33,0.34)	(1,12,18)	0,5984	0,0176	42,6455	0,0215	52,2782	230	8001	42,6455	16423,01	81396,14
14	(6 8 2 4 4 4)	(0.34,0.05,0.18,0.05,0.13,0.25) (0.11,0.21,0.11,0.11,0.12,0.12,0.11,0.11) (0.5, 0.5) (0.53,0.28, 0.1,0.09) (0.06,0.23,0.59,0.12) (0.05,0.22,0.18,0.55)	(3,12,15,18)	0,5982	0,0165	37,2865	0,0202	46,0418	229	8013	37,2865	561,1893	90806,77
15	(3 3 8 2 2 3)	(0.22,0.43,0.35) (0.2, 0.4, 0.4) (0.12,0.12,0.12,0.12,0.13,0.13,0.13,0.13) (0.77,0.23) (0.11,0.89) (0.09,0.45,0.46)	(1,4,12,16,18)	0,659	0,0162	35,9496	0,0195	42,8881	230	8019	35,9496	544,665	82802,91
16	(3 5 4 6 5 4)	(0.21,0.57,0.22) (0.13,0.15,0.15,0.15,0.42) (0.3, 0.3,0.08,0.32) (0.16,0.16,0.17,0.17,0.17,0.17) (0.09,0.41,0.27,0.13, 0.1) (0.25,0.25,0.25,0.25)	(4,12,13,18)	0,5492	0,0184	46,4274	0,0229	59,2475	230	8020	46,4274	16423,01	88009,37
17	(2 4 2 4 3 2)	(0.22,0.78) (0.09,0.09, 0.2,0.62) (0.47,0.53) (0.22,0.22,0.21,0.35) (0.33,0.33,0.34) (0.45,0.55)	(3,12,15,16,18)	0,5977	0,0148	30,1209	0,0198	44,4826	228	8013	30,1209	16423,01	65412,85
18	(2 4 2 6 4 3)	(0.5, 0.5) (0.14,0.13, 0.4,0.33) (0.51,0.49) (0.27,0.09, 0.1, 0.1,0.33,0.11) (0.25,0.25,0.25,0.25) (0.29,0.13,0.58)	(3,12,15,18)	0,602	0,0158	34,2675	0,0214	52,0173	229	8007	34,2675	16423,01	64171,13
19	(6 2 5 5 4 3)	(0.15,0.15,0.16,0.16,0.23,0.15) (0.5, 0.5) (0.2, 0.2, 0.2, 0.2, 0.2) (0.16,0.17,0.26,0.17,0.24) (0.25,0.25,0.25,0.25) (0.33,0.33,0.34)	(1,12,18)	0,6365	0,0177	43,0696	0,0216	53,0312	229	8008	43,0696	569,0963	97142,39
20	(2 8 7 6 5 3)	(0.79,0.21) (0.08,0.14,0.13,0.07,0.12,0.27,0.08,0.11) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.28,0.25,0.05,0.08,0.06,0.28) (0.19,0.25,0.19,0.19,0.18) (0.3,0.38,0.32)	(4,12,13,18)	0,6396	0,0172	40,8269	0,0218	53,9708	230	8035	40,8269	16423,01	123424,05
21	(5 4 2 2 3 2)	(0.19,0.16,0.23, 0.3,0.12) (0.13,0.29,0.29,0.29) (0.73,0.27) (0.75,0.25) (0.33,0.33,0.34) (0.71,0.29)	(3,12,15,16,18)	0,7168	0,0177	43,3053	0,0187	39,471	230	8031	40,9344	570,5662	82432,19
		(0.38,0.31,0.31)											

22	(3 9 3 2 8 7)	(0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.12,0.15,0.73) (0.45,0.55) (0.09, 0.1, 0.1,0.15,0.11, 0.2,0.09,0.16) (0.29,0.06,0.07,0.18,0.25,0.09,0.06)	(4,12,13,16,18)	0,5446	0,0156	33,6131	0,0192	41,9285	228	8020	33,6131	543,9938	131324,05
23	(6 2 5 7 3 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.16,0.84) (0.2, 0.2, 0.2, 0.2, 0.2) (0.27,0.12,0.12,0.12,0.12,0.13,0.12) (0.33,0.33,0.34) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	228	8014	43,1024	587,4006	117304,24
24	(3 7 7 2 8 8)	(0.38,0.33,0.29) (0.17,0.11,0.13,0.25,0.11,0.11,0.12) (0.13,0.15,0.13,0.17,0.13,0.14,0.15) (0.37,0.63) (0.07,0.07,0.25,0.05,0.05, 0.2,0.21, 0.1) (0.07,0.22,0.11,0.07,0.08,0.29,0.08,0.08)	(4,12,13,16,18)	0,5311	0,0148	30,3373	0,018	36,8495	231	8006	30,3373	16423,01	163315,08
25	(2 2 7 7 2 4)	(0.72,0.28) (0.79,0.21) (0.15, 0.1, 0.1, 0.1, 0.1, 0.3,0.15) (0.18,0.08,0.12,0.28,0.14,0.07,0.13) (0.34,0.66) (0.07,0.44,0.12,0.37)	(4,7,12,18)	0,6233	0,0166	37,7434	0,0223	56,4546	229	8021	37,7434	553,8172	71697,29
26	(6 7 6 6 2 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.14,0.14,0.14,0.14,0.14,0.15,0.15) (0.16,0.16,0.17,0.17,0.17,0.17) (0.16,0.16,0.17,0.17,0.17,0.17) (0.36,0.64) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	228	8029	43,1024	555,0697	117848,61
27	(6 4 4 5 5 3)	(0.15,0.15,0.16,0.16,0.19,0.19) (0.25,0.25,0.25,0.25) (0.16,0.16,0.53,0.15) (0.2, 0.2, 0.2, 0.2, 0.2) (0.2, 0.2, 0.2, 0.2, 0.2) (0.33,0.33,0.34)	(1,12,18)	0,6361	0,0177	43,0561	0,0216	53,0449	230	8001	43,0561	572,7895	151411,12
28	(3 9 9 2 5 5)	(0.22,0.56,0.22) (0.15, 0.1,0.12, 0.1, 0.1, 0.1, 0.1, 0.1,0.13) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.42,0.58) (0.11,0.09,0.33,0.16,0.31) (0.05,0.39,0.13,0.12,0.31)	(12,13,16,18)	0,611	0,0154	32,485	0,0193	42,37	228	8024	32,485	573,742	112295,03
29	(6 8 4 6 5 3)	(0.15,0.15,0.16,0.16,0.23,0.15) (0.14, 0.2,0.15,0.07,0.05,0.15,0.16,0.08) (0.25,0.25,0.25,0.25) (0.12,0.12,0.13,0.38,0.13,0.12) (0.23,0.18, 0.3,0.18,0.11) (0.33,0.33,0.34)	(1,12,18)	0,6365	0,0177	43,0696	0,0216	53,0312	228	8012	43,0696	526,9556	120060,98
30	(6 5 9 6 4 3)	(0.16,0.16,0.17,0.17,0.17,0.17) (0.2, 0.2, 0.2, 0.2, 0.2) (0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.11,0.12) (0.18,0.18,0.19,0.19, 0.2,0.06) (0.15,0.22,0.22,0.41) (0.33,0.33,0.34)	(1,12,18)	0,6492	0,0177	43,1024	0,0216	53,0682	230	8026	43,1024	16423,01	123979,3

(*) Informacion no disponible