

Acknowledgements

Many thanks to the DAAD for supporting my work financially, for Xavier coping with me and my supervisor Prof.Marti Sànchez-Juny for putting up with all those nervous emails. I want to thank Ana, Daniel and Agus for our excursion group "apt-go" and "apt-nyam" and the SIES excursion group with whom I enjoyed very many nice moments throughout this work that recharged my batteries and made me come back at full speed. Further I am grateful for the helping hands of Prof.Josep Dolz (DEHMA,UPC), Prof.Juan José Egozcue (Applied Mathematics III, UPC), Prof.Adolfo de Sostoa and Isabel Muñoz (Biology, UB), Terry Waddle (USGS, USA), Antonio Ruiz (ICC), Rogelio Galvan (CHE) and Ana Merino (ACA). Also I wish all the best to Noelia and Nerea who have been loving and honest to me. Finally my thanks go to Prof.Ostrowski and Axel Winterscheid (FB13, TU Darmstadt), without whose permission and supervision I would not have launched this work.

Declaration

I declare that this thesis was composed by myself, that the work contained herein is my own except where explicitly stated otherwise in the text, and that this work has not been submitted for any other degree or professional qualification except as specified.

(Sebastian Schoeller)