4th BSC Severo Ochoa Doctoral Symposium AGENDA

Day 1 (2nd of May)

Start	Activity	Speaker/s	Chair
8.30 h	Registration		
9.00h	Welcome and opening	Mateo Valero, BSC Director	Maria-Ribera Sancho
9.20h	Event Photo		
Coffee break &	First Poster Session 9:40 until 10:30		Osman Unsal
1	Supporting Real-Time Visual Analytics in Neuroscience	Enrique Javier Arriaga Varela	
2	Advanced Vector Architectures for Future Applications	Adrián Barredo Ferreira	
3	Leveraging FPGAs to Accelerate the Query Processing of SQL-Based DataBases	Behzad Salami	
4	Time-Predictable Parallel Programming Models	Maria A. Serrano	
5	Protein modelling for enzyme engineering	Rubén Cañadas	
First Talk Session: HPC & Novel Computer Architectures 10:30 until 12:50			Petar Radojkovic
1	Performance Impact of a Slower Main Memory: A case study of STT-MRAM in HPC	Kazi Asifuzzaman	
2	Aggregating and Managing Memory Capacity Across Computing Nodes in Cloud Environments	Luis Angel Garrido	
3	Energy Optimizing Methodologies On Heterogeneous Data Centers	Rajiv Nishtala	
4	Machine Learning Performance Prediction Model for Heterogeneous Systems	Daniel Nemirovsky	
5	Performance Analysis on the Intel Knights Landing Architecture	Michael Wagner	
12.50h	*Lunch break*		
14.00h	Tutorial Deep Learning: The tutorial will review the basic concepts, will define a few neural network models (including CNN), train them and evaluate their performance for image classification and some other related tasks.		Dario Garcia Gasulla
16.00h	*Coffee break*		
	Tutorial part 1 continues		Dario Garcia Gasulla
18.00h	Adjourn		

Day 2 (3rd May)

Start	Activity	Speaker/s	Chair
9.00h	Opening of the second day		
Second Talk Session: Mathematics, Algorithms & Computational Sci. 9:10 until 10:30			Vassil Alexandrov
6	Discovering Ship Navigation Patterns towards Environmental Impact Modeling	Alberto Gutiérrez Torre	
7	Identification and Characterization of Recurrent Deletions in the Human Genome Promoted by Expression of Transposase-Derived Gene Across Different Tumour Types	Elias Rodriguez-Fos	
8	Functional implications of the structural genomic rearrangements in cancer	Luisa Fernanda Delgado Serrano	
9	Exploring the use of mixed precision in NEMO	Oriol Tintó-Prims	
10	ORCHESTRA: An Asyncronous Non-Blocking Didtributed GVT Algorithm	Tommaso Tocci	
Coffee break & Second Poster Session 10:30 till 11:20			Javier Espinosa
1	Prediction of binding energies upon mutation in 3D-structure-known complexes through PyDock scoring functions	Bruno Cuevas Zuviria	
2	Impact of Aerosol Microphysical Properties on Mass Scattering Cross Sections	Vincenzo Obiso	
3	On the suitability of Time-Randomized Processors for Secure and Reliable High-Performance Computing	David Trilla	
4	A case for code-representative microbenchmarks	Calvin Bulla	
Third Talk Session: Programming Models, Performance analysis & Software Tools 11:20 until 12:40			Xavier Martorell
11	Programming models for mobile environments	Francesc-Josep Lordan Gomis	
12	GUIDANCE: An Integrated Framework for Large-scale Genome and PhenomeWide Association Studies on Parallel Computing Platforms	Marta Guindo-Martínez	
13	Testing simple models for street wind conditions in Barcelona	Jaime Benavides	
14	Web-based tool for the annotation of pathological variants on proteins: PMut 2017 update	Víctor López Ferrando	
15	Python for HPC geophysical electromagnetic applications: experiences and perspectives	Octavio Castillo-Reyes	
12.40h	*Lunch break*		
14.00h	Tutorial Deep Learning - part 2		Dario Garcia Gasulla
16.00h	*Coffee break*		
	Tutorial part 2 continues		Dario Garcia Gasulla
18.00h	End of the Tutorials and Adjourn		

Day 3 (4th May)

Start	Activity	Speaker/s	Chair
9.00h	Opening of the third day		
Fourth Talk Session: Simulations & Modeling 9:10 until 10:30			Eduard Ayguade
16	Data-Driven Crowd Simulation	Hugo Perez	
17	A new Reliability-Based Data-Driven approach to Simulation-Based Models	Jacobo Ayensa Jiménez	
18	Level of Detail for Complex Urban Scenes with Varied Animated Crowds, using XML	Leonel Antonio Toledo	
19	Effect of Terrain Relief on Dust Transport over Complex Terrains in West Asia	Lluís Vendrell	
20	pyDockDNA: A new approach for protein-DNA docking	Luis Ángel Rodríguez Lumbreras	
Coffee break & Third Poster Session 10:30 until 11:20			Sara Basart
1	Deep and Cognitive Learning applied to Precision Medicine: the initial experiments linking (epi)genome to phenotypes-disease characteristics.	Davide Cirillo	
2	Stabilization of Microturbulence by Fast Ions in ASDEX Upgrade	Felipe Nathan de Oliveira	
3	Main Memory in HPC: Do We Need More or Could We Live with Less?	Darko Zivanovic	
4	Excited state gradients within a polarizable QM/MM formulation	Maximilian Menger	
5	Vortex Induced Vibration (VIV) of circular cylinders at high Reynolds numbers	Daniel Pastrana	
11:20h	Keynote Alfonso Valencia: Personalised Medicine as a Computational Challenge, The treatment and analysis of genomic information is tremendously challenging for a number of reasons that include the diversity and heterogeneity of the data, strong dependence of the associated metadata (i.e experimental details), very fast evolution of the methods, and the size and confidentiality of the data sets. These problems have to be seen as opportunities, particularly for students and Post Docs in Bioinformatics, Engineering and Computer Sciences. During this talk, I will point to what I see as the most promising future areas of development.		Maria-Ribera Sancho
13.00h Lunch break			
Fifth Talk Session: Mathematics, Algorithms & Computational Sci. 14:20 until 16:00			Mariano Vazquez
21	Protein modelling for enzyme engineering	Gerard Santiago	
22	Classification of retrotransposition during somatic variant calling in cancer genomes	Jordi Valls Margarit	
23	Relevant aspects of the seismic hazard in Colima, Mexico	Armando Aguilar-Meléndez	
24	SMuFin2: generating and implementing new and more efficient search engines integrated in particular hardware architectures	Mercè Planas-Fèlix	
25	Uncertainty in near-surface wind speed trends at seasonal time scales	Verónica Torralba	
26	Production Planning and Scheduling Optimization Model: A case of study for a Glass Container Company	Laura Hervert-Escobar	
Coffee break & Fourth Poster Session 16:00 until 16:50			Victor Guallar
1	Exploring the Relationship between Gene Expression and Topological Properties of Arabidopsis thaliana Interactome Network.	Silvia M. Gimenez	
2	Simulations of Alfvénic Modes in TJ-II Stellarator	Allah Rakha	
3	Composite materials calculation using HPC-based multiscale technique.	Guido Giuntoli	
4	Application of Reduced order Modelling in Geophysics	Prattya Datta	
5	Saiph, a Domain Specific Language for Computational Fluid Dynamics simulations	Sandra Macià Sorrosal	
16:50h	Conclusions		Maria-Ribera Sancho