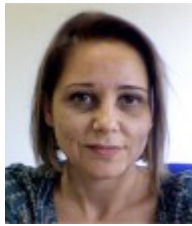


PERSONAL INFORMATION

Silvia Mocavero



📍 CMCC Foundation - Via A. Imperatore, 16, 73100 Lecce (Italy)

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✉ silvia.mocavero@cmcc.it

💬 Skype mikmok73

Sex Female | Date of birth 19/09/1973 | Nationality Italian

POSITION

Head of the High End Computing group of the Advanced Scientific Computing division at the Euro-Mediterranean Center on Climate Change Foundation, Lecce (Italy)

WORK EXPERIENCE

2014–Present

Leader of the High End Computing Group - Euro-Mediterranean Center on Climate Change Foundation

Coordination of the activities related to the High Performance Computing in the Advanced Scientific Computing Division at the Euro-Mediterranean Center on Climate Change Foundation

05/06/2006–Present

Researcher at the Euro-Mediterranean Center on Climate Change Foundation, CMCC, Italy

CMCC - Euro-Mediterranean Centre on Climate Change Foundation, ASC Division
c/o via A. Imperatore, 16, 73100 Lecce (Italy)

www.cmcc.it

Main activities:

- Scientific coordinator for CMCC of the H2020 ESIWACE from May, 2017
- Co-leader of the NEMO HPC working group from 2017
- Member of the NEMO HPC working group from 2013
- Member of the NEMO system team from 2011

Contributor to the drafting and in the activities of the following projects: IS-ENES, IS-ENES2, ESIWACE, ESCAPE2

03/2014–03/2015

PRACE project

Project name: ENS4OCEAN (ENSEmble-based approach for global OCEAN forecasting)

02/2014–08/2014

PRACE preparatory access

Project name: Optimization of the NEMO oceanic model in the GLOB16 configuration

Research field: Earth Sciences and Environment

25/02/2013–08/03/2013

Visiting scientist at the Argonne National Laboratory

Argonne National Laboratory, Chicago (United States)

Porting and scalability analysis of the NEMO oceanic model on BlueGene/Q architecture

25/10/2010–10/12/2010

Visiting scientist within the HPC EUROPA2

Barcelona Supercomputing Centre, Barcelona (Spain)

Optimization of a Biogeochemical Flux Model within the HPC-Europa2 initiative supported by the

European Commission Capacities Area - Research Infrastructures Initiative

2009–2010 **Lecturer at the University of Salento, Dept. of Engineering for Innovation, Lecce (Italy)**

Course on "Computer Systems" Computer Engineering Faculty, University of Salento, Lecce (Italy)

04/01/2006–03/05/2006 **Contract position**

University of Lecce

Dept. Engineering for Innovation, via per Monteroni, 73100 Lecce (Italy)

www.unisalento.it

Design of an Information Cache Mediator Component for resources and jobs monitoring in computational grids, within the CoreGRID European Project – European Research Network on Foundations, Software Infrastructures and Applications for large scale distributed, GRID and Peer-to-Peer Technologies. www.coregrid.net

28/11/2005–27/12/2005 **Contract position**

University of Lecce

Di.S.Te.B.A., via per Monteroni, 73100 Lecce (Italy)

www.unisalento.it

Development of data analysis software.

01/08/2005–19/10/2005 **Contract position**

University of Lecce

Dept. Engineering for Innovation, via per Monteroni, 73100 Lecce (Italy)

www.unisalento.it

Design of a MetaData Server for the metadata management supporting the ingestion in heterogeneous database. FIRB project. www.grid.it

28/06/2002–31/12/2004 **Contract position**

University of Lecce

Via per Monteroni, Lecce (Italy)

www.unisalento.it

Design and implementation of:

- an extension of the MDS Information Service Schema
- Web Services for the management of resources information
- a Relational Grid Information Service (iGrid)

within the European GridLab project – A Grid Application Toolkit and Testbed – 5th FWP. www.gridlab.org

EDUCATION AND TRAINING

28/07/2013–09/08/2013 **Argonne Training Program on Extreme-Scale Computing (ATPESC2013)**

Argonne National Laboratory, Chicago (United States)

The program focuses on programming methodologies that are effective across a variety of supercomputers and that are expected to be applicable to exascale systems. The emphasis is on unifying concepts and levels of abstraction that provide migration paths and performance portability among current and future architectures.

09/10/2006 **PhD in "Materiali e Tecnologie Innovative"**

Scuola Superiore ISUFI, University of Lecce (Italy)

Design and implementation of a distributed architecture for the performance optimization in the Diesel Common Rail Engines

13/07/2003–25/07/2003

International Summer School on Grid Computing 2003

Participation to the first International Summer School on Grid Computing, Vico Equense (Italy)

23/04/2002

Laurea Degree in Computer Engineering

University of Lecce, Lecce (Italy)

Design and implementation of DESGrid, a grid portal for the Diesel Engine performance optimization using genetic algorithms for the combustion chamber geometry optimization

PERSONAL SKILLS

Mother tongue(s) Italian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

Organisational / managerial skills

Good team-leading skills gained by leading the High-End Computing group of the Advanced Scientific Computing division

Driving licence

B

ADDITIONAL INFORMATION

Publications

Journals

Epicoco I, Mocavero S, Porter A R, Pickles S M, Ashworth M, Aloisio G (2017). Hybridisation strategies and data structures for the NEMO ocean model, IJHPCA Volume 25, doi:10.1177/1094342016684930

Balaji V, Maisonnave E, Zadeh N, Lawrence B N, Biercamp J, Fladrich U, Aloisio G, Benson R, Caubel A, Durachta J, Foujols M-A, Lister G, Mocavero S, Underwood S, Wright G (2017). CPMIP: measurements of real computational performance of Earth system models in CMIP6, Geosci. Model Dev., 10, 19-34, doi:10.5194/gmd-10-19-2017, 2017.

Epicoco I, Mocavero S, Macchia F, Vichi M, Lovato T, Masina S, Aloisio G (2016). Performance and results of the high-resolution biogeochemical model PELAGOS025 v1.0 within NEMO v3.4. Geosci. Model Dev., 9, 2115-2128, doi:10.5194/gmd-9-2115-2016, 2016.

Epicoco I, Mocavero S, Aloisio G (2012). The performance model for a parallel SOR algorithm using the red-black scheme. INTERNATIONAL JOURNAL OF HIGH PERFORMANCE SYSTEMS ARCHITECTURE, vol. 4, p. 101-109, ISSN: 1751-6528

Cafaro M, Epicoco I, Fiore S, Lezzi D, Mocavero S, Aloisio G (2009). Near real-time parallel processing and advanced data management of SAR images in grid environments. JOURNAL OF REAL-TIME IMAGE PROCESSING, vol. 4, p. 219-227, ISSN: 1861-8200, doi: 10.1007/s11554-009-0119-z

Mirto M, Fiore S, Epicoco I, Cafaro M, Mocavero S, Blasi E, Aloisio G (2008). A Bioinformatics Grid Alignment Toolkit. FUTURE GENERATION COMPUTER SYSTEMS, vol. 24, p. 752-762, ISSN: 0167-739X, doi: 10.1016/j.future.2008.02.001

Aloisio G, Cafaro M, Carteni G, Epicoco I, Fiore S, Lezzi D, Mirto M, Mocavero S (2007). The grid resource broker portal. CONCURRENCY AND COMPUTATION, vol. 19, p. 1663-1670, ISSN: 1532-0626, doi: 10.1002/cpe.1131

Donateo T, Laforgia D, Aloisio G, Mocavero S (2006). Evolutionary Algorithm as a Tool for Advanced Designing of Diesel Engines. INTERNATIONAL JOURNAL OF COMPUTATIONAL INTELLIGENCE

RESEARCH, vol. 2, p. 169-180, ISSN: 0973-1873

Conferences

Mocavero S, Nigro A, Resta A, Rosato C, Sciolti G, Epicoco I, Aloisio G (2015). Performance analysis of the COSMO-CLM model. Workshop on Weather, Climate, and solid Earth Sciences (WCES), International conference on High Performance Computing & Simulation (HPCS2015), *Amsterdam, Netherlands, July 20-24, 2015* pp.581-588, doi: 10.1109/HPCSim.2015.7237096

Epicoco I, Mocavero S, Macchia F, Aloisio G (2014). The Roofline Model for Oceanic Climate Applications. Workshop on Weather, Climate, and solid Earth Sciences (WCES), International conference on High Performance Computing & Simulation (HPCS2014), *Bologna, Italy, July 21-25, 2014* pp. 732-737, ISBN: 978-1-4799-5311-0

Epicoco I., Mocavero S., Aloisio G., "Performance Optimization of NEMO Oceanic Model at High Resolution", EGU2014, April 27-May 2, 2014, Vienna, Austria (abstract)

Epicoco I, Mocavero S, Aloisio G (2013). Porting and Performance Analysis of the NEMO Ocean Model on Blue Gene/Q. In: Proceeding of the 19th Annual Meeting of ScicomP, Lugano May 28-31, 2013

Porter A, Pickles S, Ashworth M, Aloisio G, Epicoco I, Movavero S (2013). Hybrid Strategies for the NEMO Ocean Model on Multi-core Processors. Abstract for the Exascale Applications and Software Conference, Edinburgh 9-11 Apr, 2013

Epicoco I, Mocavero S (2012). The Performance Model of an Enhanced Parallel Algorithm for the SOR Method. In: Beniamino Murgante, Osvaldo Gervasi, Sanjay Misra, Nadia Nedjah, Ana Maria A.C. Rocha, David Taniar, Bernady O. Aduhan. Computational Science and Its Applications - ICCSA 2012 (part I). Salvador de Bahia, Brazil, June 2012, vol. I, p. 44-56, BERLIN HEIDELBERG:Springer-Verlag, ISBN: 978-3-642-31124-6, doi: 10.1007/978-3-642-31125-3

Epicoco I, Mocavero S, Aloisio G (2011). A performance evaluation method for climate coupled models. *PROCEDIA COMPUTER SCIENCE*, In: Proceedings of the International Conference on Computational Science, ICCS 2011. Singapore, 01/06/2011-03/06/2011, vol. 4, p. 1526-1534, AMSTERDAM:ELSEVIER SCIENCE PUBLISHER B.V., ISSN: 1877-0509, doi: 10.1016/j.procs.2011.04.165

Epicoco I, Mocavero S, Aloisio G (2011). NEMO Oceanic Model Optimization. In: HPC-Europa2 - Science and Supercomputing in Europe Research highlights 2010. Barcelona, Spain, June, 8-9 2011, p. 98, BOLOGNA:CINECA Consorzio Interuniversitario, ISBN: 978-88-86037-24-2

Epicoco I, Mocavero S, Aloisio G (2011). The NEMO oceanic model: Computational performance analysis and optimization. In: Proceedings of the 2011 IEEE International Conference on High Performance Computing and Communications (HPCC 2011). Banff, Canada, Sep 2-4, 2011, p. 382-388, Los Alamitos, CA:IEEE Computer Society, ISBN: 978-076954538-7, doi: 10.1109/HPCC.2011.56

Mocavero S, Epicoco I, Aloisio G (2011). The Nemo Oceanic Model: Improvement of Scalability on MareNostrum. In: HPC-Europa2 - Science and Supercomputing in Europe Research highlights 2010. Barcelona, Spain, June, 8-9 2011, p. 103, BOLOGNA:CINECA Consorzio Interuniversitario, ISBN: 978-88-86037-24-2

Epicoco I, Mocavero S, Aloisio G (2010). Experience on the parallelization of the OASIS3 coupler. In: Parallel and Distributed Computing 2010. Brisbane (Australia), January 2010, vol. 107, p. 51-59, American Chemical Society (ACS), ISBN: 978-1-920682-88-0

Aloisio G, Blasi E, Epicoco I, Mocavero S (2006). Industrial Problem Optimization in a Grid Environment. In: HPDC Workshop proceedings CD. Paris, France, 20 June 2006, p. 102-109

Donateo T, Laforgia D, Aloisio G, Mocavero S (2005). An evolutionary algorithm to design diesel engines. In: The 2005 IEEE Congress on Evolutionary Computation - IEEE CEC2005. Edinburgh (Scotland), Sep 2-5, 2005, vol. I, p. 802-809, Los Alamitos, CA:IEEE Computer Society, ISBN: 0-7803-9363-5, doi: 10.1109/CEC.2005.1554765

Aloisio G, Cafaro M, Epicoco I, Fiore S, Lezzi D, Mirto M, Mocavero S (2005). Resource and service discovery in the iGrid Information Service. In: COMPUTATIONAL SCIENCE AND ITS APPLICATIONS - ICCSA 2005, PT 3. Singapore, May 9-12, 2005, vol. 3482, p. 1-9, BERLIN HEIDELBERG:Springer-Verlag, ISBN: 3-540-25862-0

Aloisio G, Cafaro M, Epicoco I, Fiore S, Lezzi D, Mirto M, Mocavero S (2005). iGrid, a Novel Grid Information Service. In: Advances in Grid Computing - EGC 2005. Amsterdam, The Netherlands, Febbraio 14-16, 2005, vol. 3470, p. 506-515, BERLIN HEIDELBERG:Springer-Verlag, ISBN: 3-540-26918-5, doi: 10.1007/11508380_52

Aloisio G, Blasi E, Cafaro M, Epicoco I, Fiore S, Mocavero S (2004). A grid environment for diesel engine chamber optimization. In: Parallel Computing — Software Technology, Algorithms, Architectures and Applications. Dresden, 2-5 September 2003, vol. 13, p. 599-607,

AMSTERDAM:Elsevier Sci. Publ. B.V., ISBN: 0-444-51689-1, doi: 10.1016/S0927-5452(04)80075-3
De Risi A., Donateo T, Laforgia D, Aloisio G, Blasi E, Mocavero S (2004). An Evolutionary Methodology for the Design of a D.I. Combustion Chamber for Diesel Engines. In: THIESEL 2004 Conference on Thermo- and Fluid Dynamic Processes in Diesel Engines. Valencia, Spagna, 7-10 settembre 2004, vol. I, p. 545-559, Valencia:EDITORIAL DE LA UPV, ISBN: 84-9705-621-3
Aloisio G, Cafaro M, Epicoco I, Lezzi D, Mirto M, Mocavero S (2004). The design and implementation of the GridLab Information Service. In: GRID AND COOPERATIVE COMPUTING, PT 1. Shanghai (China), December 2003, vol. 3032, p. 131-138, BERLIN HEIDELBERG:Springer-Verlag, ISBN: 3-540-21988-9

WORKSHOPS ORGANIZATION

[1] Co-organizer of the "5th ENES Workshop on High Performance Computing for High-resolution Climate and Weather Modelling", May 2018

[2] Co-organizer of the "International Workshop on High Performance Computing for Weather, Climate, and solid Earth Sciences" HPC-WCES 2014-2015-2016

Seminars

Lecturer at the ISSAOS 2016 summer school (Code profiling and optimization), August 2016, L'Aquila (Italy)