

ADVCOMP 2015

Forward

The Ninth International Conference on Advanced Engineering Computing and Applications in Sciences (ADVCOMP 2015), held between July 19-24, 2015 in Nice, France, was a multi-track event covering a large spectrum of topics related to advanced engineering computing and applications in sciences.

With the advent of high performance computing environments, virtualization, distributed and parallel computing, as well as the increasing memory, storage and computational power, processing particularly complex scientific applications and voluminous data is more affordable. With the current computing software, hardware and distributed platforms effective use of advanced computing techniques is more achievable.

The goal of ADVCOMP 2015 was a forum to bring together researchers from the academia and practitioners from the industry in order to address fundamentals of advanced scientific computing and specific mechanisms and algorithms for particular sciences. The conference provided a forum where researchers were able to present recent research results and new research problems and directions related to them. The conference sought contributions presenting novel research in all aspects of new scientific methods for computing and hybrid methods for computing optimization, as well as advanced algorithms and computational procedures, software and hardware solutions dealing with specific domains of science.

The conference had the following tracks:

- Advanced methods in fusion physics
- Development of computing support
- Computing techniques
- Complex computing in application domains
- Computing applications in science
- Computing in Virtualization-based environments
- Advances in computation methods

Similar to previous editions, this event attracted excellent contributions and active participation from all over the world. We were very pleased to receive top quality contributions.

We take here the opportunity to warmly thank all the members of the ADVCOMP 2015 technical program committee, as well as the numerous reviewers. The creation of such a high quality conference program would not have been possible without their involvement. We also kindly thank all the authors that dedicated much of their time and effort to contribute to ADVCOMP 2015. We truly believe that, thanks to all these efforts, the final conference program consisted of top quality contributions.

Also, this event could not have been a reality without the support of many individuals, organizations and sponsors. We also gratefully thank the members of the ADVCOMP 2015 organizing committee for their help in handling the logistics and for their work that made this professional meeting a success.

We hope that ADVCOMP 2015 was a successful international forum for the exchange of ideas and results between academia and industry and to promote further progress in the area of Advanced Engineering Computing and Applications in Sciences. We also hope that Nice, France, provided a pleasant environment during the conference and everyone saved some time to enjoy the charm of the city.

ADVCOMP 2015 Chairs

ADVCOMP Advisory Chairs

Chih-Cheng Hung, Southern Polytechnic State University, USA
Juha Röning, Oulu University, Finland
Erich Schweighofer, University of Vienna, Austria
Paul Humphreys, University of Ulster, UK
Danny Krizanc, Wesleyan University, USA
Ivan Rodero, Rutgers University - Piscataway, USA
Ali Shawkat, CQ University of Australia - North Rockhampton, Australia
George Spanoudakis, City University London, UK
Vladimir Vlassov, KTH Royal Institute of Technology, Sweden
Jerry Trahan, Louisiana State University, USA
Dean Vucinic, Vrije Universiteit Brussel (VUB), Belgium
Rudolf Berrendorf, Bonn-Rhein-Sieg University, Germany
Wenbing Zhao, Cleveland State University, USA
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Laurent Réveillère, Bordeaux Institute of Technology, France
Ewa Grabska, Jagiellonian University - Krakow, Poland

ADVCOMP Industry/Research Chairs

Jorge Ejarque Artigas, Barcelona Supercomputing Center (BSC-CNS), Spain
Helmut Reiser, Leibniz Supercomputing Centre (LRZ)-Garching, Germany
H. Metin Aktulga, Lawrence Berkeley National Lab, USA
Sameh Elnikety, Microsoft Research, USA
Umar Farooq, Amazon.com - Seattle, USA
Alice Koniges, Lawrence Berkeley Laboratory/NERSC, USA
Markus Kunde, German Aerospace Center & Helmholtz Association - Cologne, Germany
Peter Müller, IBM Zurich Research Laboratory- Rüschlikon, Switzerland
Simon Tsang, Applied Communication Sciences - Piscataway, USA
Anna Schwanengel, Siemens AG, Germany
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Marie Lluberes, University of Puerto Rico at Mayagüez, USA

Sascha Opletal, University of Stuttgart, Germany

Álvaro Navas, Universidad Politecnica de Madrid, Spain

Iwona Ryszka, Jagiellonian University - Krakow, Poland