

SCAN'2012

First Call for Contributions

15th GAMM - IMACS International Symposium on Scientific Computing,
Computer Arithmetic, and Verified Numerical Computations

Novosibirsk, Russia, September 23-29, 2012

The 15th GAMM-IMACS International Symposium on Scientific Computing, Computer Arithmetic and Verified Numerical Computations will take place in Novosibirsk, at the Institute of Computational Technologies of the Siberian Department of Russian Academy of Sciences, on September 23-29, 2012.

This conference continues the series of international SCAN symposia initiated by University of Karlsruhe, Germany, and held under the joint auspices of GAMM and IMACS. In past years, SCAN symposia have been held in many cities across the world: Basel, Switzerland (1989), Albena, Bulgaria (1990), Oldenburg, Germany (1991), Vienna, Austria (1993), Wuppertal, Germany (1995), Lyon, France (1997), Budapest, Hungary (1998), Karlsruhe, Germany (2000), Paris, France (2002), Fukuoka, Japan (2004), Duisburg, Germany (2006), El Paso, Texas, USA (2008), Lyon, France (2010).

SCAN symposia have covered the numerical and algorithmic aspects of scientific computing, with an emphasis on verification of the results, interval methods as well as on arithmetic, programming, and algorithmic tools for this purpose. Their objectives have been both to propagate current applications and research and to promote a greater understanding and increased awareness of the subjects.

SCAN'2012 strives to advance the frontiers in verified numerical computations, interval methods, as well as their application to computational engineering and science.

Scope and Topics

The SCAN symposia gather researchers in scientific computing and practitioners who work with numerical verification of computed results and interval methods. Techniques and tools in use include, but are not limited to, interval arithmetic, floating-point computations, symbolic approaches, formal proofs, sensitivity analysis, etc. The scope of the SCAN conferences covers all aspects, from theory to implementation and applications, with a strong emphasis on verification of computed results, as well as on mathematical, programming, and algorithmic tools for this purpose.

Topics of interest include, but are not limited to

- Theory, algorithms, and arithmetics for verified numerics
- Verification in operations research, optimization, and simulation
- Verified solution of ordinary and partial differential equations
- Symbolic and algebraic methods for numerical verification
- Interval analysis and its applications
- Hardware and software support, programming tools for verification
- Supercomputing and reliability
- Applications of verified numerical computations

Meeting Format

The scientific program will consist of invited plenary lectures and contributed presentations. Each plenary lecture is a 45-minute talk followed by a 5-minute discussion. Each contributed presentation is a 20-minute oral presentation followed by a 5-minute discussion. Contributed presentations will be organized into parallel sessions.

Contributed presentations are invited in all areas of interest. The conference language is English.

Scientific Committee of SCAN'2012

G. Alefeld (Karlsruhe, Germany) , J.-M. Chesneaux (Paris, France), G.F. Corliss (Milwaukee, USA), T. Csendes (Szeged, Hungary), A. Frommer (Wuppertal, Germany), R.B. Kearfott (Lafayette, USA), W. Kraemer (Wuppertal, Germany), V. Kreinovich (El Paso, USA), U. Kulisch (Karlsruhe, Germany), W. Luther (Duisburg, Germany), G. Mayer (Rostock, Germany), S. Markov (Sofia, Bulgaria), J.-M. Muller (Lyon, France), M. Nakao (Fukuoka, Japan), M. Plum (Karlsruhe, Germany), N. Revol (Lyon, France), J. Rohn (Prague, Czech Republic), S. Rump (Hamburg, Germany), S. Shary (Novosibirsk, Russia), Yu. Shokin (Novosibirsk, Russia), W. Walter (Dresden, Germany), J. Wolff von Gudenberg (Wuerzburg, Germany), N. Yamamoto (Tokyo, Japan)

Abstracts

All interested participants are asked to submit a LaTeX source of the abstract (with no more than 700 words of text, according to a sample file downloadable from the conference web-site) by e-mail to scan2012@ict.nsc.ru. Please use as subject "Abstract for SCAN'2012" and your name.

A book of SCAN'2012 Abstracts will be distributed to participants at registration.

Proceedings

Peer-refereed post-conference proceedings will be published in special issues of the open electronic journal "Reliable Computing" (see details at the web-site <http://interval.louisiana.edu/reliable-computing-journal>). Further information with deadlines will be announced later.

Venue

The conference SCAN'2012 will be held at Institute of Computational Technologies (ICT) of the Siberian Department of the Russian Academy of Sciences. This institute is located in the famous Novosibirsk Akademgorodok, one of Russia's major scientific centers, home to more than twenty scientific institutions. The time of the conference coincides with the most picturesque season in Siberia, local Indian summer and golden leaf fall.

Pre-conference Workshop

SCAN'2012 is preceded by Constraint Programming and Decision Making Workshop CoProd'2012 on September 23, 2012. See <http://coprod.constraintsolving.com>

Important Dates

On-line abstract submission:	April 30, 2012
Acceptance notification:	May 31, 2012
Deadline for early conference fee:	July 16, 2012
Pre-Conference Workshop CoProd'2012:	September 23, 2012
Conference:	September 24-28, 2012
Departure day:	September 29, 2012
Submission for post-conference proceedings:	to be announced later

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Conference web-site

<http://conf.nsc.ru/scan2012>