

Preface to the Special SCAN-2008 Issue

Martine Ceberio and Vladik Kreinovich
Department of Computer Science, University of Texas
at El Paso, El Paso, Texas, 79968, USA
`{mceberio,vladik}@utep.edu`

This volume contains extended versions of the selected papers presented at the 13th GAMM-IMACS International Symposium on Scientific Computing, Computer Arithmetic and Verified Numerical Computations SCAN'2008 that took place at the University of Texas at El Paso on September 29 – October 3, 2008.

The conference continues the series of international SCAN symposia held under the joint sponsorship of GAMM (International Association of Applied Mathematics and Mechanics) and IMACS (International Association for Mathematics and Computers in Simulation).

These symposia have covered the numerical and algorithmic aspects of scientific computing, with a strong emphasis on verification of computed results, 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 subject matters.

These symposia have been initiated by the University of Karlsruhe, Germany. They have been held in many cities across the world: in Basel, Switzerland (1989), in Albena, Bulgaria (1990), in Oldenburg, Germany (1991), in Vienna, Austria (1993), in Wuppertal, Germany (1995), in Lyon, France (1997) in Budapest, Hungary (1998), in Karlsruhe, Germany (2000), in Paris, France (2002), in Fukuoka, Japan (2004), and in Duisburg, Germany (2006).

The goal of SCAN 2008 was to advance the frontiers in verified numerical computations, as well as in their applications to computational engineering and science. Its topics of interest included:

- hardware and software support for verification tools;
- theory, algorithms and arithmetic for verified numerical computations;
- supercomputing and reliability;
- dynamical systems and verified numerical computation;
- Global optimization and verified numerical computation;
- programming tools for verified numerical computation;

- computer aided proofs;
- industrial and scientific applications of verified numerical computations.

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