

Report on SCEE-2000, August 20-23, 2000, Warnemünde, Germany

Nearly a hundred scientists and engineers from twelve countries gathered in Warnemünde, Germany, from August 20 to 23 to participate in the 3rd International Workshop on Scientific Computing in Electrical Engineering, SCEE-2000. The weather was not as warm and stable as usual in August but it was sunny enough to enjoy the location at the Baltic Sea and the Social Programme. This included sightseeing tours through the fishermen's village and seaside resort of Warnemünde and the old Hanseatic town of Rostock, the reception by a senator of the city of Rostock in the main building of the oldest university in Northern Europe (Rostock University founded in 1419), the company tours with a big shipyard amongst others, and last but not least the dinner combined with boat trip to Rostock where we could enjoy a perfect sunset. Several participants did not hesitate to go swimming in the evening or early morning, others stayed longer to enjoy the beach of Warnemünde after the workshop.



From the ninety four participants, seventy three came from universities, thirteen from industry and eight from research laboratories. Not surprisingly about 75% of the university participants came from Germany, 22% from Europe outside Germany (including Eastern Europe) and 3% from the US; about 31% of the participants from industry came from Germany, 62% from Europe outside Germany and 7% from the US; finally, about 62.5% of the participants from research laboratories came from Germany, 37.5% from Europe outside Germany (including Eastern Europe), none from the US. We estimate that the number of mathematicians and electrical engineers amongst the participants was about equal.

This workshop followed two earlier workshops held in 1997 at the Darmstadt University of Technology and in 1998 at Weierstrass Institute for Applied Analysis and Stochastics under the auspices of the German Mathematical Society. Several senior scientists, in particular Prof. Rentrop (Karlsruhe, formerly Darmstadt) and Prof. Deuffhard (Berlin), had felt the urgent need for a workshop which would bring together two scientific communities of applied mathematicians and electrical engineers, in particular those who do research in the field of scientific computing in electrical engineering. This, of course, is a wide field, which is why it was decided to concentrate on selected major topics. The workshop in Darmstadt, which was organized by Dr. Günther and Dr. van Rienen, brought together more than 100 scientists interested in numerical methods for the simulation of circuits and electromagnetic fields. This was a great success. Voices coming from the participants suggested



that it was time to bring these communities together in order to get to know each other, to discuss mutual interests and to start cooperative work. A collection of selected contributions appeared in 'Surveys on Mathematics for Industry'. The workshop in Berlin, organized in large part by Dr. Hebermehl, had a similar scope and brought together more than 80 scientists. Both workshops showed a growing international interest. Therefore the decision was made in Berlin that future biennial workshops should also officially be international with international announcements and English as the conference language. The vote was to carry out the 2000 workshop at Rostock University, which has been Prof. van Rienen's place of work since the autumn of 1997.

Main topics of SCEE-2000 were: Computational Electrodynamics, Circuit Design and Coupled Problems. The SCEE-2000 programme committee consisted of scientists from industry and universities. Its members were Dr. Günther, Universität Karlsruhe (TH), Germany; Prof. Langer, Universität Linz, Austria; Prof. van Rienen, Universität Rostock, Germany; Dr. ter Maten and Prof. Schilders, Philips Research Laboratories, Eindhoven, The Netherlands; Dr. Feldmann, Infineon Technologies, München, Germany.

The programme committee invited six plenary speakers having in mind several goals: gaining leading experts, inviting mainly young scientists, which is already a kind of SCEE tradition, and gaining speakers from industry. The invited speakers were Jaijeet Roychowdhury (Bell Laboratories, Murray Hill) on "Multi-Time PDEs for Dynamical System Analysis", Ronald Rietman (Philips



Research Laboratories, Eindhoven) on *"A Common-Mode Skeleton Model for EMC Simulations"*, Caren Tischendorf (Humboldt Universität zu Berlin) on *"Benefits of Special Structures of DAEs for the Time Domain Analysis of Integrated Circuits and Consequences for the Model Design"*, Irina Munteanu (Politehnica University Bucharest) on *"Coupling Electromagnetic Devices to Electric Circuits using Parameter Extraction"*, Leszek Demkowicz (The University of Texas at Austin) on *"Adaptive hp-FE Modeling for Maxwell's Equations with Applications to Scattering and Waveguides"* and Peter Rentrop (Universität Karlsruhe) on *"Numerical Integration and Software in Electric Circuit Simulation"*. Another important principle of the SCEE workshops is to have only plenary



sessions. Therefore poster sessions also took place which are usual in electrical engineering conferences but less common in mathematical congresses. After reviewing the submitted abstracts the programme committee had chosen 30 contributed talks which represented the scope of contributed papers and were of broad interest. They drew attention to related posters. There was a total of 17 posters. The best posters were honoured with a poster award. The committee consisted of three invited speakers: Prof.

Demkowicz, Prof. Munteanu and Dr. Rietman. They chose Olaf Michelsson (Ilmenau) for the 1st prize and Karsten Rothmund (Rostock) for the 2nd prize. All contributions - talks and posters - were very interesting and on a high scientific level. After careful reviewing of the full papers, by two reviewers each, the proceedings will be published in the "Lecture Notes in Computational Science and Engineering" by Springer (briefly Springer LNCSE).

One "side-effort" of the local organizing committee was to find a suitable logo for SCEE-2000 and the upcoming workshops. We were fortunate to receive help from the Department for design and interior design of the Hochschule Wismar, a university for applied sciences. Students of Prof. Hanka Polkehn made several designs. The logo designed by the student Ramona Weyde-Ferch was chosen as the winner. It is an arrangement of the four letters SCEE, some lines which might be interpreted as field lines or wave fronts and part of a bracket which stands for mathematical bracket but also symbolises the idea of this workshop as bringing together several communities - mathematicians and engineers, university and industry.

Very important in launching a scientific event such as the SCEE is substantial financial support. The Programme Committee is greatly indebted to the DFG, the central public funding organisation for academic research in Germany comparable to a Research Council or Foundation, to the Ministry of Education, Science and Culture of Mecklenburg-Western Pomerania, to Rostock University, to the town of Rostock and to several private companies which are listed in the Web: <http://www.SCEE-2000.uni-rostock.de/>.

The SCEE-2000 committees decided that SCEE-2002 will be held in Eindhoven, the Netherlands. The date is already fixed: 23-28 June 2002. A regularly updated Web page with new information on the upcoming SCEE-2002 can be found under <http://www.win.tue.nl/~scee2002/>. For subscription on information, send e-mail to scee2002@win.tue.nl.

A photo gallery on SCEE-2000 can be found under <http://www.SCEE-2000.uni-rostock.de/>, the logo under <http://www.win.tue.nl/~scee2002/>