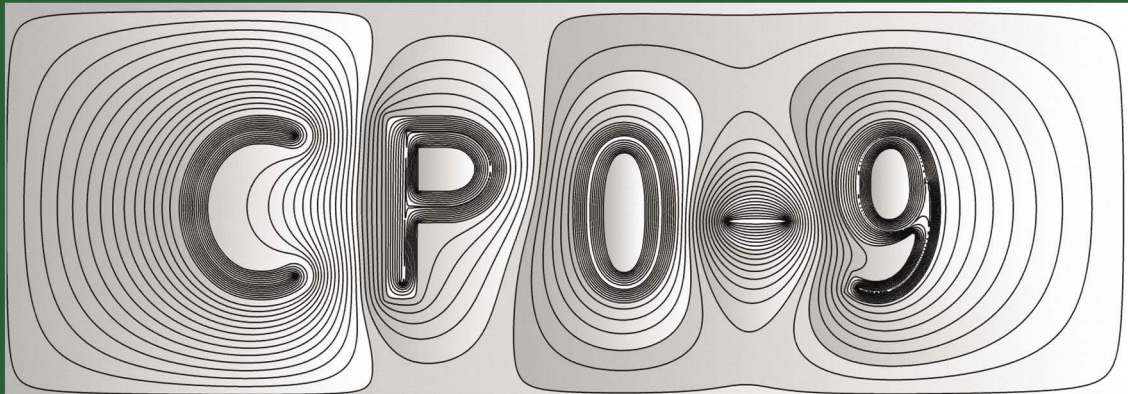


Proceedings

Ninth International Conference on Charged Particle Optics



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Edited by

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Prefaces

The series of conferences on charged-particle optics was launched in 1980 by Hermann Wollnik together with the late Karl Brown and myself in an attempt to bring together the three main CPO communities, accelerator optics, spectrometer optics and electron optics. All three groups were pleased and somewhat surprised to discover how much they had in common, and it was decided to continue to meet at regular intervals. The fact that so many contributions have been submitted to this ninth meeting shows that the formula is as attractive as ever and the organisers have succeeded in producing a balanced programme with much original material in each of the domains of interest.

The first of these meetings was held in Hermann Wollnik's University town of Giessen, since when we have visited the United States and Asia, returning three times to Europe: Toulouse in 1990, Delft in 1998 and Cambridge in 2006, all distinguished centres of electron optics. The various choices of venue reflect the world-wide interest in charged-particle optics: the organisers of the American meetings were specialists in accelerator optics (Albuquerque and College Park, MD) and ion optics (College Park). The Tsukuba meeting in 1994 was more general, with a new session on CRT optics as well as the traditional themes while the organizer of the Singapore conference (2010) has worked on numerical methods for CPO and on scanning electron microscope and spectrometer design. Brno is well known for major contributions to software for CPO and for low-voltage scanning electron microscopy.

There have been exciting developments in all the areas covered by the conference. In electron optics, the successful implementation of aberration correctors for electron microscopes has dominated the literature for the last few years but other aspects of the subject have not been neglected; a session is devoted to ion optics. The optics of accelerators and mass and energy spectrometers is likewise providing many surprises. These proceedings provide a unique snapshot of the world of charged-particle optics in 2014.

Peter Hawkes

The 9th International Conference on Charged Particle Optics, CPO-9, took place between August 31st and September 5th in Brno, Czech Republic, and was organized by the Institute of Scientific Instruments of the ASCR, v. v. i. (ISI). Altogether 112 participants from 18 countries spent one week in the Continental hotel in Brno downtown. The scientific program included 59 oral presentations of which 16 talks were invited. In addition, 40 posters were exhibited over the full duration of the event. This time the CPO was held jointly with the 14th International Seminar on Charged Particle Optics and Surface Physics Instrumentation, which has been biannually organized by ISI at Skalský dvůr in the Bohemian-Moravian Highlands. Hence a symposium devoted to Surface Physics Instrumentation was included in the CPO-9 program together with seven other symposia. Symposia were organized in 90 minute sessions allocated according to numbers of abstracts submitted; they dealt with Electron Optics (3 sessions), Numerical Methods (3), Ion Optics (2), Accelerator Optics (2), Mass Spectrometers (2), Energy Spectrometers (1) and Aberration Studies (1). The social program culminated in a concert of classical music inside the Catherine Cave in the Moravian Karst.

Proceedings composed of four to six page texts form a supplement to the *Microscopy and Microanalysis* journal. All active participants were invited to present manuscripts recording their presentation at CPO in more detail. Altogether, 55 manuscripts have been collected from presenters of oral contributions or posters. After the reviewing procedure, 47 papers survived to appear in this volume. The skilled and conscientious work done by reviewers of the papers is highly appreciated.

Luděk Frank

Previous International Conferences on Charged Particle Optics

1980 Giessen, Germany
1986 Albuquerque, NM, USA
1990 Toulouse, France
1994 Tsukuba, Japan
1998 Delft, Netherlands
2002, Washington, DC, USA
2006, Cambridge, England
2010, Singapore

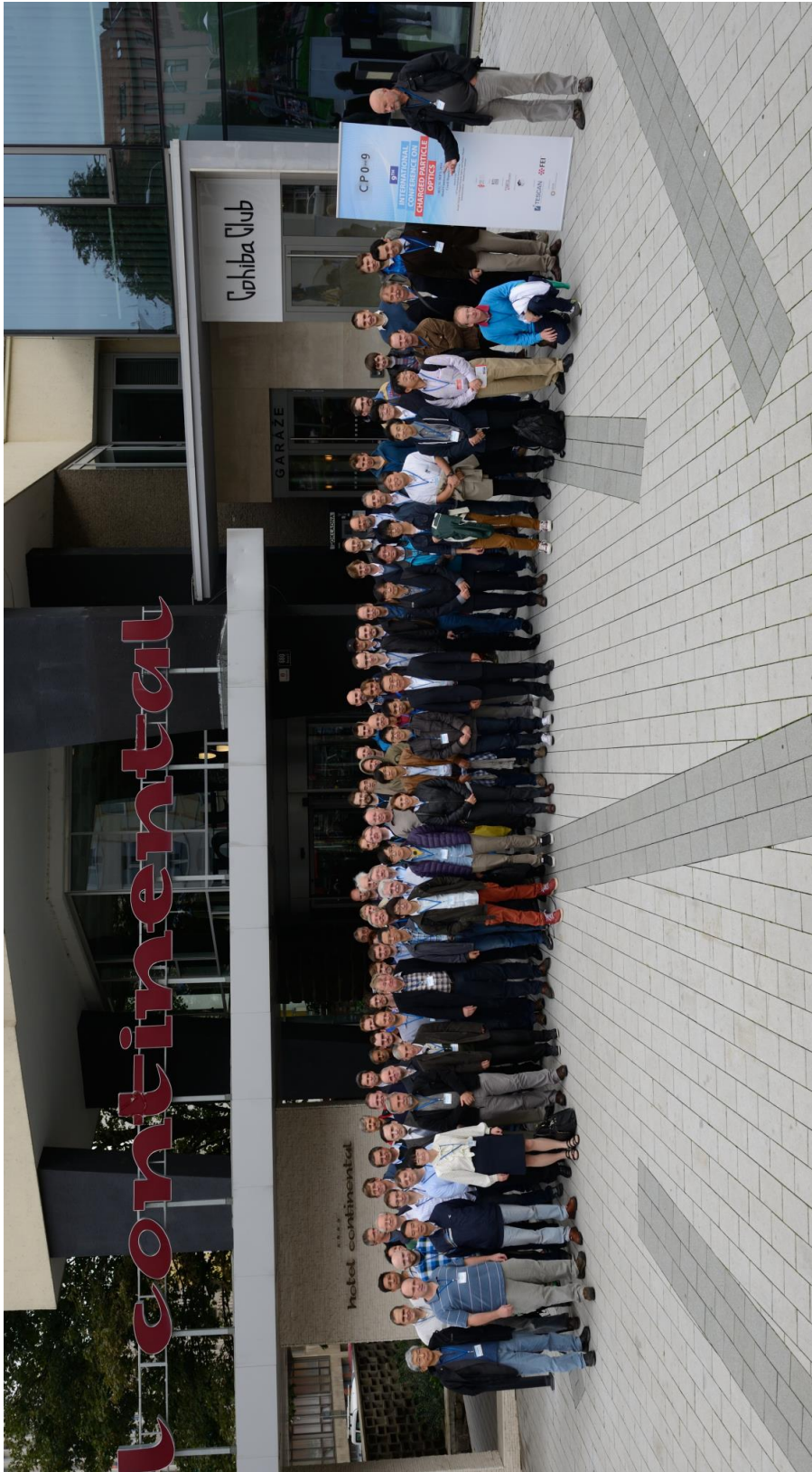
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PROCEEDINGS

Ninth International Conference on Charged Particle Optics

with 14th International Seminar on Charged Particle Optics and
Surface Physics Instrumentation

**Institute of Scientific Instruments, v. v. i.
The Czech Academy of Sciences**

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