Report on the ICHM co-sponsored Symposia at the 25th International Congress on the History of Science, Technology and Medicine (ICHSTM)

Rio de Janeiro, Brasil, July 22 – 29 July 2017

Symposium S 27

"The resurgence of applied mathematics 1850-1950: national and international, academic, industrial and military contexts"

Organizers

June Barrow-Green (Open University, UK)

Reinhard Siegmund-Schultze (University of Agder, Norway)

Renate Tobies (Universität Jena, Germany)

There was a total of 10 speakers, and the talks were evenly distributed over four sessions on Tuesday, 25 July, 2017. The topics of the sessions were ordered roughly chronologically and chaired by Rolf Nossum, June Barrow-Green, Renate Tobies, and Reinhard Siegmund-Schultze. Four out of the ten speakers were women, and two were under forty. One speaker was preparing his Ph.D. All sessions were well attended with an average of 20 listeners. Discussion was lively. In at least three cases (Nossum, Meyer-Spasche, Kotůlek) speakers plan joint articles after the symposium.

Thanks to the financial support by ICHM two particularly successful contributions by Kotůlek and Royle could be secured. The former was the only participant from an East-European country with limited travel money and, as a younger scholar, he has no permanent position. The latter is preparing his Ph.D. and was thus in need of special support as well. Both received support of 1,500 US dollars each.

Abstract

The symposium contributes to an analysis of global and local changes in the relationship between pure and applied mathematics roughly in the century from 1850-1950. Contributing factors were among others the rise of new industries, including new production modes (electrical industry and telecommunication, insurance, aircraft), developments in mathematical physics, astronomy, and meteorology (statistics, optimization, numerical analysis), not least exigencies from two World Wars (ballistics, aerodynamics). The period saw the rise of the first mathematical laboratories in an industrial context on an international scale and the foundation of the first journals specialized in applied mathematics. There were changes in the relation between public and private funding of mathematics in the period

considered, which partly differed, partly coincided in various countries. The symposium aims at studying these developments in an international, comparative perspective. The main countries to be discussed are Germany, France, Austria, England, Canada, U.S., Czechoslovakia, Norway, and various countries in Latin America.

Speakers (in alphabetical order)

June Barrow-Green (Open University, Milton Keynes, UK): *"An exquisite machine": Olaus Henrici's harmonic analyser*

Craig Fraser (University of Toronto, Canada): *J. C. Fields, Applied Science and Canadian Government Support of Mathematics 1915-1930*

Jan Kotůlek (Technical University, Ostrava, Czech Republic): *Sources for introducing social insurance to the Latin America: Emil (Emilio) Schoenbaum and Czechoslovak actuarial mathematics*

Rita Meyer-Spasche (MPI for Plasma Physics, Munich, Germany): *On the Impact of Desktop Mechanical Calculators on the Development of Numerical Analysis*

Rolf Nossum (University of Agder, Norway): *Applied mathematics at the periphery of Europe around 1900: an overview of Norwegian traditions in geomagnetism, statistics, meteorology, and astronomy*

Tatiana Roque (Universidade Federal do Rio de Janeiro, Brasil): *The beginnings of IMPA at the crossroads of different mathematical cultures*

Tony Royle (Open University, Milton Keynes, UK): *The mathematics of aeronautical engineering in Britain as described in contemporary Britishjournals and newspapers, 1900 – 1920*

Reinhard Siegmund-Schultze (University of Agder, Norway): *Changes in the historical triangle of graphical/geometrical methods, numerical analysis, and mathematical instruments in the decades before WWII*

Renate Tobies (Friedrich-Schiller-Universität, Jena, Germany): *Mathematics, Optics, and Medical Technology at the Carl Zeiss Company and Their International Context, around 1900*

Dominique Tournès (Université Reunion, France): *The diffusion of nomography in civil engineering and industry (1900-1950)*