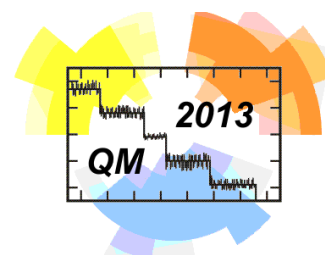


Program of the QM 2013



Wednesday, May 15, 2013

8:15 ÷ 13:00 Registration

9:00 Opening the QM 2013 conference

9:10 The watt balance: determination of the Planck constant and redefinition of the kilogram (opening talk) – M. Stock, Bureau International des Poids et Mesures, Sèvres, France.

9:45 Recent progress in determination of fundamental constants (invited talk) – S.G. Karshenboim, Pulkovo Observatory, St. Petersburg, Russia.

10:20 Coffee break

10:45 Quantum standards of electrical current (invited talk) – F.-J. Ahlers, PTB Braunschweig, Germany

11:20 Improving the coherence of superconducting resonant quantum circuits (invited talk) – M. Weides, NIST Boulder, USA

11:55 The logical structure and "excepta" of the present SI system of units – A. Zięba, AGH Technical University, Cracow, Poland

12:20 Room-temperature glassy alloy field-effect transistor with particle and wave natures – M. Fukuhara, Research Institute for Electromagnetic Materials, Sendai, Japan

12:45 ÷ 14:00 Lunch break

14:00 Detection of Terahertz Waves from High Temperature Superconducting BiSrCaCuO (invited talk) – L. Ozyuzer, Izmir Institute of Technology, Turkey.

14:35 Opto-mechanical Materials for Low Noise Operation at Cryogenic Temperature – P. Seidel, Jena University, Germany

15:00 Intrinsic Josephson Junctions for Quantum Metrology – Yu. M. Shukrinov, JINR Dubna, Russia

15:25 Break

15:40 Squeezing and Two-Mode-Squeezing Enhanced Metrology (invited talk) – R. Schnabel, Hannover University, Germany

16:15 Current Quantization Error Sources in a SINIS Turnstile – V. M. Maisi, OVLL Altoo / MIKES, Finland

16:40 Time for exhibitors, short presentations

17:00 ÷ 18:00, Poster session at coffee

- ✓ Optical Fiber Time and Frequency Transfer in Poland - State of the Art; A. Czubla et al., Central Office of Measures, Warsaw, Poland.
- ✓ Long-term Stability of the Polish National Standard of Length; D. Czulek et al., Central Office of Measures, Warsaw, Poland.
- ✓ Micron-sized Terahertz Emitters Fabricated from Intrinsic Josephson Junctions in Cuprate Superconductors; Y. Demirhan et al., Izmir Institute of Technology, Turkey.
- ✓ Scanning Tunneling Microscopy Investigations of Nanostructures; K. Gajewski et al., Wrocław University of Technology, Poland.

- ✓ Compensation of the Changes Temperature Influence on the Propagation Time of the Digital Electronic Components; M. Maćkowski, Poznan University of Technology, Poland.
- ✓ Measurements of mechanical properties of NEMS doubly clamped bridges using atomic force microscopy; M. Moczala et al., Wroclaw University of Technology, Poland.
- ✓ Comparisons of Quantum Phenomena Based Electrical Quantities Standards; M. Orzepowski et al, Central Office of Measures, Warsaw, Poland.
- ✓ Predicting Corrections for the UTC(PL) Based on the UTC Rapid Scale; Ł. Sobolewski et al., Zielona Gora University, Poland.
- ✓ Shot Noise in a Double-barrier Magnetic Tunnel Junction, T. Szczepański et al., Rzeszow University of Technology, Poland.
- ✓ Quantum AC Josephson voltage standard; A. Tatar et al., Central Office of Measures, Warsaw, Poland.
- ✓ Experimental Demonstrations of High-Q Superconducting Resonators, Yiwen Wang, Southwest Jiaotong University Chengdu, China.
- ✓ Photoelectric Effect with Electrons Trapped on Liquid Helium; Miao Zhang, Southwest Jiaotong University Chengdu, China.

Thursday, May 16

Conference Hall (parallel sessions)

- 9:00 SQUID applications from biomagnetism to ultra low-field MRI (invited talk)
– H. Nowak, BMDSys Production GmbH, Günzburg, Germany.
- 9:35 Readout of Micro/Nano-SQUIDs – F. Ruede, PTB Berlin, Germany.
- 10:00 AC Josephson voltage standards at PTB; O. Kieler, PTB Braunschweig, Germany.
- 10:25 Primary thermal AC voltage standard: progress report – M. Kampik, Silesian University of Technology, Gliwice, Poland.

10:50 Coffee break

- 11:15 KFM calibration method – R. Jabłoński, Warsaw University of Technology, Poland.
- 11:40 Kelvin Probe Force Microscopy as a Metrology Method for the Grapheme Nano-structures investigations – K. Gajewski, Wroclaw University of Technology, Poland.
- 12:05 Superoperator Representation of Lindblad Master Equation for Electron Transport Problem – A. Dzhioev, JINR Dubna, Russia.

Building of Faculty of Electronics & Telecom, Room 101 (parallel sessions)

- 9:00 Progress in determination of the Boltzmann constant uncertainty – A. Szmyrka-Grzebyk, Institute for Low Temperatures of PAS, Wrocław, Poland.
- 9:25 Relating temperature to Boltzmann constant using Coulomb blockade thermometry – M. Meschke, OVLL Aalto, Finland.
- 9:50 On the way to the new system of units – W. Nawrocki, Poznan University of Technology, Poland.
- 10:15 Coherent Effects and Electrodynamics of metamaterials – S. Tarapov, National Academy of Sciences Ukraine, Kharkov, Ukraine.

10:40 Coffee break

- 11:15 Historical and metrological aspects of the development of quantum metrology
– K.A. Tomilin; Russian Academy of Sciences, Moscow, Russia.

11:40 Experimental demonstrations of high-quality superconducting resonators for single-photon detections – L.-F. Wei, Southwest Jiaotong University Chengdu, China.

12:05 Nano-scale modification of martensite structures in copper based shape memory alloys – O. Adiguzel, Firat University, Elazig, Turkey.

12:30 ÷ 14:00 Lunch break

For a choice:

14:00 ÷ 18:30 Technical visit to the Astrogeodynamical Observatory and Monitoring Center for GPS satellites, Borowiec; and to Kornik Castle (by bus, 20 km away from Poznan) – limit up to 45 persons (two groups, two buses).

or

14:00 ÷ 17:00 Sightseeing of the Poznan city with a walk and by tram. To visit Old Market Square and Cathedral – limit up to 25 persons (one group).

19:30 ÷ 22:00 **Conference dinner**

Friday, May 17

9:00 Quantum estimation for quantum technology (invited talk) – M. Paris, Milano University, Italy.

9:35 Exploring the Quantum with Superconducting Circuits (invited talk) – R. Gross, Bavarian Academy of Sciences, Garching, Germany.

10:10 Quantum parameter estimation with noise addition – A. De Pasquale, NEST Pisa, Italy.

10:35 Estimation with a fixed rate of abstention – R. Munoz-Tapia, Barcelona University, Spain.

11:00 Coffee break

11:20 Biological measurement beyond the quantum limit (invited talk) – W.P. Bowen, University of Queensland, Lucia, Australia

11:55 Few-photon spectroscopy of a trapped ion through sensitive recoil detection – P.O. Schmidt, Hamburg University, Germany

12: 20 Methods of long distance time transfer with sub-nanosecond precision – J. Nawrocki, Borowiec Astrogeodynamical Observatory, Polish Academy of Sciences, Poland

12:45 Real-time evaluation of synchronization signals – M. Kasznia, Poznan University of Technology, Poland

13:10 Conference closing

13:20 Lunch

Place of the conference

The QM 2013 conference will take place on the campus of Poznan University of Technology, in the PNCA Conference Hall (former Polish-German Center), ul. Kórnicka 5, Poznan.

GPS position: 52° 24' 01" North; 16° 57' 07" East

Tram line **6** from main railway station. Tram stop: **Kornicka** or **Politechnika**.