

C5 Activity Report for the IUPAP Council and Commission Chairs Meeting October 2017-April 2018

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Activity Report

This review covers the period October 2017 – April 2018 with a summary of the immediate previous six month period.

1.0 Activity Previous Period April 2017 – October 2017

1.1 Conferences Organized and Endorsed

Type A

28th International Conference on Low Temperature Physics (LT28), Gothenburg, 9-16 August 2017.

Preliminary data available at this time:

904 registrants, 800 abstracts submitted, 25 exhibitors, and 2 major sponsors. The demographics for the largest registrations include 270 from Japan, 80 from Germany, 80 from USA, and 65 from Sweden. At least 10% of delegates were women: this fraction was similar for senior delegates and student delegates. 8 Plenary talks (0 women), 25 half-plenary talks (5 women), 64 Invited talks (>9 women).

Chair: P. Delsing, Co-Chairs: M. Fogelström, J Bylander, F Lombardi (one woman). For more details see <http://www.lt28.se/> The Programme Committee was 28% women, and the International Advisory Committee 14.5% women. Financial support was received by 13 delegates (4 women). IUPAP C5 also sponsored poster awards at the meeting.

A scientific summary of the meeting was prepared by IUPAP C5 and is included in the conference proceedings: Journal of Physics: Conference Series.

Type B

ULT2017, Frontiers of Low Temperature Physics. August 17-21 2017, Heidelberg, Germany.

180 registrants (21 women) from 21 countries. 27 invited talks (2 women), 28 contributed talks (1 woman), 106 posters. Three poster awards (1 woman).

Chair: C. Enss, Heidelberg

This conference, which was a satellite of LT28, brought together a broad community of researchers to forge links between different experimental communities, with a common interest in ultralow temperature physics, from fundamental science to techniques and applications. Topics included; superfluid ^3He and topological matter; heavy fermions; disordered quantum systems; low dimensional systems; model systems for quantum turbulence; superconducting quantum technology; nanomechanical systems; cooling nanoelectronics into the microkelvin regime; cryogenic detectors for far-infra-red astronomy, determination of neutrino mass, dark matter searches.

Endorsed Conference

Mesoscopic Transport and Quantum Coherence 2017 (QTC 2017). August 5-8 2017, Espoo, Finland. 175 registrants (14 women) from 20 countries, 22 invited talks (1 woman).

Chair: Mika Sillanpaa.

This conference, which was a satellite of LT28, presented the latest research, ongoing development and applications related to quantum effects in electron transport, superconducting qubits and hybrid circuits, quantum thermodynamics, circuit QED, cavity optomechanics, topological and two dimensional materials.

1.2 Commission Meetings

Commission C5 met at LT28 in August 2017. Subsequent business has been conducted by e-mail.

Work is beginning to identify the organisers/site of LT29 in 2020. By geographical rotation this should be in Asia.

1.3 C5 Sponsored Prizes Awarded

IUPAP C5 Young Investigator Prize:

Dr. Clifford Hicks (Max-Planck Institute for Chemical Physics of Solids, Dresden, Germany),

Vlad Pribiag (University of Minnesota, Minneapolis, USA)

Fritz London Memorial Prize:

William Halperin (Northwestern University, Evanston, Illinois USA), James Sauls (Northwestern University, Evanston, Illinois USA), Jeevak Parpia (Cornell University, Ithaca, NY USA)

Simon Memorial Prize:

Professor Louis Taillefer (University of Sherbrooke and the Canadian Institute for Advanced Research, Sherbrooke Canada)

2.0 Activity Current Period

2.1 Anticipated Sponsored Conferences

Type A

29th International Conference on Low Temperature Physics (LT28) August 16-22, 2020, Sapporo, Japan

About 1,200 participants

Chair: Naoto Nagaosa, Yoshiteru Maeno

This proposal was approved by C5 at its meeting at LT28. It will be submitted for approval of Type A sponsorship to IUPAP in due course.

Type B

International Conference on Quantum Fluids and Solids (QFS 2018)

July 25-31, 2018, Ito International Research Center, University of Tokyo, Japan

About 310 participants

Chair: Hiroshi Fukuyama

This conference has been approved by IUPAP for Type B sponsorship.

Type B

International Conference on Quantum Fluids and Solids (QFS 2019)

August 7-13, 2019, University of Alberta, Edmonton, Canada

Chairs: John Beamish, John Davis

This proposal has been approved by the QFS steering committee (in August 2017) and will receive consideration for support by C5 in due course.

Submitted by

William Halperin, C5 chair

April 2018