

THEORY CANADA 12 CONFERENCE: BUILDING COMMUNITY FROM BRITISH COLUMBIA TO NEWFOUNDLAND

BY MATTHEW JOHNSON AND SVETLANA BARKANOVA



The Theory CANADA conference, launched in 2005 as a satellite conference for the annual Canadian Association of Physicists (CAP) congress, was yet another success in 2017. This unique conference brings together theorists from all regions of Canada, aiming to foster collaboration and exchange of ideas across many disciplines. What makes it special is that all the sessions of the conference are plenary, with no parallel talks, so Theory CANADA is bringing together community not only from all across Canada, but also from across various areas of theoretical physics, ranging from cosmology to quantum information.

The Theory CANADA Conference 12 conference was held at York University on May 26 and 27, 2017, chaired by Matthew Johnson (Perimeter Institute and York University) assisted by a strong team from York (Marko Horbatsch, Tom Kirchner, Roman Koniuk, Randy Lewis, Kim Maltman, Sean Tulin) and the DTP Executive (Svetlana Barkanova, Memorial University of Newfoundland and Ariel Edery, Bishops University). York University turned out to be a wonderful conference venue, with easy access from Toronto Pearson airport, modern residences, and many restaurant options nearby.

The conference was sponsored by the Fields Institute, Perimeter Institute for Theoretical Physics, Canadian Institute for Theoretical Astrophysics, Institute of Particle Physics, York University Faculty of Science,

and Centre de Recherches Mathématiques who were crucial in making this conference a success.

The conference featured 9 invited speakers and 28 contributed talks. Most of the contributed talks were delivered by graduate students and postdocs, making this conference an important training opportunity for future leaders in the Canadian theoretical physics community. A total of 70 participants registered, with representation from many regions of Canada (Ontario, Quebec, Newfoundland and Labrador, Manitoba, Nova Scotia, and British Columbia). We had especially good representation from the Perimeter Institute faculty, postdocs and students, with 15 in total attending from PI. As it is customary for Theory CANADA, the six sessions represented the areas of Mathematical Physics, Quantum Foundations and Quantum Information, Cosmology, Gravity, and Astrophysics, Condensed Matter Physics, Nuclear and Particle Physics, and String Theory and Quantum Gravity. Talks were intended to be accessible to attendees outside of the speaker's field. Speakers made a great effort at this, and many attendees expressed that they learned something truly new. A full schedule of the talks can be found at <http://cosmo.phys.yorku.ca/schedule.html>.

Some of the scientific highlights of the event included: a sequence of contributed talks by Angelika Fertig (postdoc, Perimeter Institute) and Job Feldbrugge (PhD student, Perimeter Institute) describing exciting new ideas about the role of lorentzian path integrals in quantum theory and quantum gravity; an extremely clear and topical talk by Eric Poisson (faculty, U Guelph) about tidal deformations of neutron stars in their merger; a sequence of contributed talks by Laszlo Zalavari and Peter Hayman (PhD students, McMaster) on the use of effective theory in understanding various singular properties of charged point particles; an invited talk by David Morrissey (faculty, TRIUMF) on non-abelian gauge bosons in dark sectors; and an invited talk by Brandon van Zyl (faculty, St. Francis Xavier) on many-body quantum effects in a bilayer system of dipolar fermions which generated a number of interesting questions from

Matthew Johnson
<mjohnson@perimeterinstitute.ca>,
York University,
Toronto, ON
M3J 1P3
(Also affiliated with
Perimeter Institute)

Svetlana Barkanova
<sbarkanova@grenfell.mun.ca>,
Memorial University
of Newfoundland,
St. John's,
NL A1C 5S7

SUMMARY

The Theory CANADA conference, launched in 2005 as a satellite conference for the annual Canadian Association of Physicists (CAP) Congress, was yet another success in 2017. The Theory CANADA Conference 12 conference was held at York University on May 26 and 27, 2017. It featured 9 invited speakers and 28 contributed talks.

theorists outside his field. Overall, the quality of both the invited and contributed talks were exceptional.

The Theory CANADA 13 will be hosted by St. Francis Xavier University (Antigonish, Nova Scotia), in June 7-9, 2018, right before the CAP Congress hosted by Dalhousie University (Halifax, Nova Scotia) in June 11-15, 2018, with no registration fees for the CAP Congress delegates. Please see <http://physics.stfx.ca/TC13/> for details. One of the features of the TC13 conference will be an invited talk from the winner the DTP/WITP Ph.D. thesis prize awarded to a student receiving a Ph.D. degree in the current or prior calendar year. For more information about the prize, please see <http://www.cap.ca/en/div/dtp/thesis-prize>.

As usual, Theory CANADA will strive to sponsor accommodations for invited speakers, graduate students and postdoctoral fellows, and, funding permitting, accommodation to all participants. Please contact the TC13 conference chair, Peter Marzlin, Department of Physics, St. Francis Xavier University, pmarzlin@stfx.ca, for details. The Atlantic GR conference will also take place at StFX on June 5-6, right before TC13. Please contact Robert van den Hoogen at rvandenh@stfx.ca for more information.

We greatly thank all Theory CANADA 12 attendees, speakers, and sponsors for making this event a great success, and hope Theory CANADA 13 will be just as enjoyable.