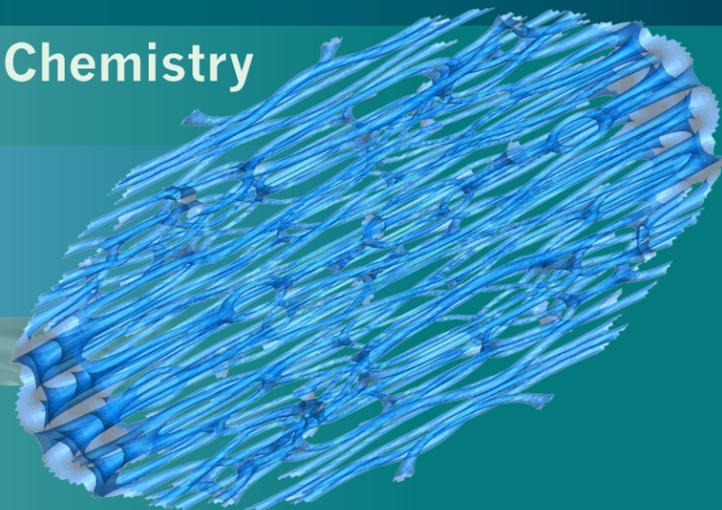




Quantum Systems in Cold-matter Physics and Chemistry

APRIL 22-26, 2019
FIELDS INSTITUTE, TORONTO



Description

A sequel to the Thematic Program on Multiscale Scientific Computing (January-April 2016), this retrospective workshop will explore the interplay between mathematical analysis and scientific computations with applications to quantum systems in cold-matter Physics and Chemistry.

The first theme of the workshop concerns superfluid quantum systems: Bose-Einstein condensates and superfluid helium. Progress in this field have the potential to trigger a new technological revolution. In the wake of recent advances made by experimental and theoretical physicists, the workshop will survey the state-of-the-art computational methods for superfluid systems and will generate a lively debate on new mathematical and numerical ideas in this field.

The second theme concerns the related problems of molecular simulation with their connections to the broad field of multiscale computation. This is a research area with manifold applications in chemistry, solid-state physics, materials science, molecular biology and nanosciences. The workshop will focus on new advances in mathematical modelling and numerical methods used to understand subtle phenomena taking place at the atomic scale or to simulate molecular systems of practical interest.

Keynote Speakers:

Weizhu Bao (National University of Singapore)
Anne de Bouard (Ecole polytechnique, France)
Eric Cancès (Ecole des Ponts ParisTech)
Julia Contreras (LPT, UPMC, Paris)
Panayotis Kevrekidis (U. of Massachusetts, Amherst)

Organizing Committee:

Ionut Danaila (University of Rouen Normandy)
Yongyong Cai (CSRC, Beijing)
Yvon Maday (UPMC, Paris)

For more information, please visit:
<http://www.fields.utoronto.ca/activities/18-19/quantum-systems>

