


INT Program INT 15-1

Frontiers in Quantum Simulation with Cold Atoms

March 23 – May 8, 2015



Monday, March 23, 2015

Room C-421, Physics/Astronomy Tower

10:00am David Kaplan, INT Director, & Organizers

Welcome & Announcements

10:15am Uwe-Jens Wiese, University of Bern

“Tutorial, Quantum link models for the quantum simulation of dynamical gauge theories”

Tuesday, March 24, 2015

Room C-421, Physics/Astronomy Tower

9:30am Sandro Stringari, University of Trento

“Rotons and stripes in spin-orbit coupled Bose-Einstein condensates”

10:30am Debasish Banerjee, DESY

“Crystalline Confinement and fractional fluxes in Abelian Quantum Link and Dimer Models”

Room C-520, Physics/Astronomy Tower

2:00pm Gerardo Ortiz, Indiana University

“Many-body characterization of particle-conserving topological superfluids”

3:15pm Leonardo Mazza, Scuola Normale Superiore

“Magnetic crystals and helical states in alkaline-earth fermionic gases”


3:45pm Lianyi He, Los Alamos National Laboratory

“Solid-state physics approach to crystalline structures in FFLO superfluidity”

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Wednesday, March 25, 2015

Room C-421, Physics/Astronomy Tower

- 9:30am Marcello Dalmonte, University of Innsbruck
“Lattice gauge theories on quantum emulators and quantum computers”
- 10:30am Congjun Wu, UCSD
“Topological and strong correlation physics in the px/py-orbital bands of the honeycomb lattice – from optical lattices to solid states”

Thursday, March 26, 2015

Room C-421, Physics/Astronomy Tower

- 9:30am Cristiane Morais Smith, University of Utrecht
“Dynamical competition between Quantum Hall and Quantum Spin Hall effects”
- 10:30am Yannick Meurice, University of Iowa
“Gauge-invariant implementations of the finite density Abelian Higgs model on optical lattices”

Room C-520, Physics/Astronomy Tower

- 2:00pm Catherine Laflamme, University of Innsbruck / IQOQI
“Optical Lattice Implementation of the CP(N-1) Model in the Continuum Limit using Alkaline Earth Atoms”
- 3:15pm Nadiia Vlasii, Bern University
“From Chern-Simons-Maxwell Theory to the Toric Code”
- 3:45pm Biao Lian, Stanford University
“Spin textures in dipolar gases from a Dirac string perspective”

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Friday, March 27, 2015

Room C-421, Physics/Astronomy Tower

9:30pm Peter Orland, Baruch, CUNY

“The Gauge-Symmetric Phase”

10:30pm Lode Pollet, Arnold Sommerfeld Center

“On Higgs modes and the optical conductivity in $O(2)$ models in condensed matter physics”

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| Name, Institution | Email | Arrival | Depart | Office | Phone |
|---|-------------------------------|---------|--------|--------|--------|
| Debasish Banerjee, DESY | debasish.banerjee@desy.de | 3/22 | 4/5 | C438 | 5-9831 |
| Aurel Bulgac, University of Washington | bulgac@uw.edu | 3/23 | 5/8 | B478 | 5-2988 |
| Marcello Dalmonte, University of Innsbruck | marcello.dalmonte@uibk.ac.at | 3/22 | 4/3 | C437 | 5-3620 |
| Wynne Evans, Bern University | evans@itp.unibe.ch | 3/22 | 4/4 | C438 | 5-9830 |
| Alexander Fetter, Stanford University | fetter@stanford.edu | 3/22 | 4/3 | C418 | 5-9776 |
| Michael Forbes, Washington State University | michael.forbes@wsu.edu | 3/23 | 5/8 | C437 | 5-3620 |
| Lianyi He, Los Alamos National Laboratory | lianyi@lanl.gov | 3/22 | 4/5 | C404 | 5-3971 |
| Tin-Lun Ho, The Ohio State University | jasontlho@gmail.com | 3/20 | 5/9 | C411a | 5-3633 |
| Catherine Laflamme, University of Innsbruck / IQOQI | catherine.laflamme@gmail.com | 3/22 | 4/2 | B474 | 5-9775 |
| Xiaopeng Li, Joint Quantum Institute | lixpen1987@gmail.com | 3/22 | 4/18 | C441 | |
| Biao Lian, Stanford University | blian@stanford.edu | 3/23 | 4/2 | B470 | |
| Leonardo Mazza, Scuola Normale Superiore | leonardo.mazza@sns.it | 3/22 | 4/3 | C441 | |
| Yannick Meurice, University of Iowa | yannick-meurice@uiowa.edu | 3/22 | 4/4 | C422 | 5-9779 |
| Cristiane Morais Smith, University of Utrecht | c.demoraismith@uu.nl | 3/23 | 4/2 | C420 | 5-9781 |
| Peter Orland, Baruch, CUNY | orland@nbi.dk | 3/22 | 3/28 | C422 | 5-9778 |
| Gerardo Ortiz, Indiana University | ortizg@indiana.edu | 3/22 | 4/3 | C424 | 5-9827 |
| Lode Pollet, Ludwig Maximilian University of Munich | Lode.Pollet@lmu.de | 3/22 | 4/3 | C424 | 5-9828 |
| Benni Reznik, Tel Aviv University | benni.reznik@gmail.com | 3/21 | 4/4 | C418 | 5-9782 |
| Marie Rider, University of Innsbruck | marie.rider@uibk.ac.at | 3/22 | 4/2 | B449 | 5-9726 |
| Zhe-Yu Shi, Tsinghua University | shizy07@mails.tsinghua.edu.cn | 3/22 | 5/8 | B474 | 5-9774 |
| Sandro Stringari, University of Trento | stringar@science.unitn.it | 3/22 | 4/1 | C437 | 5-3620 |
| Nadiia Vlasii, Bern University | vlasii@itp.unibe.ch | 3/22 | 4/3 | C441 | |
| Uwe-Jens Wiese, University Bern | wiese@itp.unibe.ch | 3/22 | 4/11 | C411a | 5-3606 |
| Congjun Wu, UCSD | wucj@physics.ucsd.edu | 3/22 | 4/2 | C420 | 5-9780 |
| Wei Zheng, Tsinghua University | zhengwei8796@gmail.com | 3/22 | 5/9 | C441 | |
| Peter Zoller, University of Innsbruck | peter.zoller@uibk.ac.at | 3/22 | 4/10 | C411a | 5-3606 |