

PROGRAM (July, 28-29)

Lecture Hall: A03 Plato
Poster Hall: A05 Locke

SUN, July-28-2013

13:30 - 18:00 **Registration + Reception**

14:00 - 18:00 **Poster session**

MON, July-29-2013

Novel quantum many-body methods

Chair: Ying-Jer Kao

09:30 - 10:15 Xiang *Tensor renormalization and its application in the critical systems*

10:15 - 10:45 McCulloch *Time evolution and locality in tensor networks*

10:45 - 11:15 **Coffee break**

11:15 - 12:00 Lee *Recent new progress on variational approach for strongly correlated t - J model*

12:00 - 12:30 Alet *Accessing localization properties of many-body systems with quantum Monte Carlo*

12:30 - 14:00 **Lunch**

Entanglement

Chair: Ferenc Iglói

14:00 - 14:30 Melko *Entanglement at quantum critical points in two dimensions*

14:30 - 15:00 Orús *2D topological order: robustness and multipartite entanglement*

15:00 - 15:30 Läuchli *Entanglement spectroscopy of quantum matter*

15:30 - 16:45 **Poster session**

PROGRAM (July 30)

Lecture Hall: A03 Plato

TUE, July-30-2013

Superconductivity, superfluidity

Chair: Chung-Yu Mou

09:30 - 10:15 Yip *Order parameter and surface states for superconducting Cu:Bi₂Se₃*

10:15 - 10:45 Pollet *Lattice modulation of a two-dimensional superfluid: could it be ... the Higgs particle?*

10:45 - 11:15 **Coffee break**

Disordered systems

Chair: Yu-Cheng Lin

11:15 - 12:00 Rieger *The two-dimensional disordered Bose-Hubbard model: phase diagrams and new applications*

12:00 - 12:30 Iglói *Random quantum magnets in $d \geq 2$ dimensions: critical behavior and entanglement entropy*

12:30 - 14:00 **Lunch**

Deconfined quantum-criticality

Chair: Anders Sandvik

14:00 - 14:45 Kawashima *Quantum phase transition in $SU(N)$ J-Q Heisenberg model*

14:45 - 15:15 Sen *Low-energy excitations of near-critical 2D antiferromagnets*

15:15 - 15:45 **Coffee break**

15:45 - 16:30 Kaul *Fate of $\mathbb{C}P^{N-1}$ fixed points with q -monopoles*

16:30 - 17:00 Beach *Resonating-valence-bond trial wave functions (and beyond) for frustrated quantum magnets*

18:30 - **Banquet** (by invitation only)

PROGRAM (July 31)

Lecture Hall: A03 Plato

WED, July-31-2013

Topological states, fractionalization

Chair: Feng-Li Lin

09:30 - 10:15	Assaad	<i>Phase diagram of the Kane-Mele Hubbard model</i>
10:15 - 10:45	Schuch	<i>Characterizing topological order in Projected Entangled Pair States</i>
10:45 - 11:15		Coffee break
11:15 - 12:00	Singh	<i>Yb₂Ti₂O₇ a model Quantum Spin Ice</i>
12:00 - 12:30	Pollmann	<i>Topological phases in gapped edges of fractionalized systems</i>
12:30 - 14:00		Lunch

Quantum computing, dissipation

Chair: Pochung Chen

14:00 - 14:45	Poulin	<i>The search for a new, self-correcting phase of matter</i>
14:45 - 15:15	Wei	<i>Universal quantum computation with AKLT states</i>
15:15 - 15:30		Coffee break
15:30 - 16:15	Cugliandolo	<i>From Brownian dynamics to impurity motion in 1D quantum liquids</i>
16:15 - 17:00	Young	<i>Numerical studies of Adiabatic Quantum Computing applied to optimization and graph isomorphism problems</i>