

The workshop for young researchers on
“New Trends in Condensed Matter Theory”
Institute for Solid State Physics (ISSP), University of Tokyo,
in Kashiwa, Japan, February 19-20, 2004

Program

Thursday, February 19

- 9:00-9:15 **Kazuo Ueda** (ISSP, University of Tokyo)
Opening
- 9:15-9:45 **Shuichi Murakami** (University of Tokyo)
Spin Hall effect in semiconductors
- 9:45-10:15 **Gen Tatara** (Osaka University)
Persistent current and Hall effect due to spin chirality
- 10:15-10:45 **Mikio Eto** (Keio University)
Current-induced entanglement among nuclear spins in quantum dots
- 10:45-11:00 [break]
- 11:00-11:30 **Hitoshi Seo** (CERC, AIST)
Charge order in molecular conductors and related topics
- 11:30-12:00 **Yukitoshi Motome** (RIKEN)
Orbital degrees of freedom in d electron systems
- 12:00-12:30 **Hiroaki Kusunose** (Tohoku University)
Multipolar degrees of freedom in f electron systems
- 12:30-13:30 [lunch]
- 13:30-15:30 **Poster session 1**
- 15:30-16:00 **Hiroki Saito** (Tokyo Institute of Technology)
Bose-Einstein condensation of atomic gases
- 16:00-16:30 **Yasuhiro Asano** (Hokkaido University)
Quantum transport in unconventional superconductor junctions
- 16:30-17:00 **Naruo Sasaki** (Seikei University)
Superlubrication of zero dynamic friction by C_{60} molecular bearings
- 17:00-17:30 **Kazuto Akagi** (University of Tokyo)
Study on dynamics of unsaturated hydrocarbon molecules on Si(001) surface
- 18:00- **Get Together Party** (ISSP Cafeteria)

Friday, February 20

8:30-9:00 **Hiroshi Kontani** (Saitama University)

Theory of transport phenomena in strongly correlated systems

9:00-9:30 **Shinji Watanabe** (ISSP, University of Tokyo)

Development of new numerical algorithm and its application

9:30-10:00 **Ryotaro Arita** (University of Tokyo)

Theoretical materials design - From the standpoint of the electron correlation

10:00-10:15 [break]

10:15-10:45 **Naokazu Shibata** (University of Tokyo)

Application of the DMRG method to quantum Hall systems

10:45-11:15 **Kazunori Sato** (ISIR, Osaka University)

Exchange interactions and Curie temperatures in diluted magnetic semiconductors

11:15-11:45 **Takao Kotani** (Osaka University)

How to combine ab-initio methods with model approaches?

11:45-12:45 [lunch]

12:45-13:45 **Poster session 2**

13:45-14:15 **Akira Furusaki** (RIKEN)

Transport in disordered systems

14:15-14:45 **Kazumitsu Sakai** (Tokyo Institute of Technology)

Quantum transfer matrix and applications to the Heisenberg chain:

Calculation of the thermal conductivity

14:45-15:15 **Satoshi Fujimoto** (Kyoto University)

Field theoretical analysis for one-dimensional quantum transport phenomena

15:15-15:30 [break]

15:30-16:00 **Tsutomu Momoi** (RIKEN)

Duality and exotic (chiral) order in correlated ladder systems

16:00-16:30 **Kenji Harada** (Kyoto University)

World-line Monte Carlo methods for quantum spin models

16:30-17:00 **Munetaka Sasaki** (ISSP, University of Tokyo)

Aging phenomena in disordered systems

17:00- **Hidekatsu Suzuura** (Hokkaido University)

Closing