

Mathematical approach to emerging topics in material science 2012

Date : Feb. 18th 13:00 - Feb. 19th 18:00, 2012

Place : Seminar room (2nd Floor), WPI-AIMR main building,

Tohoku University, Sendai, Japan

(<http://www.wpi-aimr.tohoku.ac.jp/en/modules/wraps/index.php/outline/access.html>)

Organizer : Yasumasa NISHIURA, Motoko KOTANI, Takayoshi OGAWA

Program

February 18th (Sat.)

13:00 - 13:50 Shinya Nishibata (Tokyo Institute of Technology)

Asymptotic stability of boundary layers to the Euler-Poisson equation in plasma physics

14:00 - 14:30 Shuji Yoshikawa (Ehime University)

Mathematical analysis for shape memory alloys

Tea.

15:00 - 15:50 Tatsuya Tate (Nagoya University)

A formal of Plancherel-Rotach type for quantum walks on the line

16:00 - 16:50 Toshikazu Sunada (Meiji University)

Crystallography and discrete algebraic geometry

17:00 - 17:50 Pavel Exner (Czech Technical University)

Resonances in quantum graphs, their behavior and generalizations

February 19th (Sun.)

9:00 - 9:50 Chun Liu (Penn State University)

Energetic Variational Approaches for Ionic Fluids and Electrorheological Fluids

10:00 - 10:50 Keith Promislow (Michigan State University)

Network Formulation and Ion Conduction in Ionomer Membranes

11:00 - 11:50 Wataru Shinoda (AIST)

Molecular Dynamics Study of Self-Assembly of Amphiphiles

12:00 - 12:50 Carlos J.Garcia-Cervera (University of CaliforniaSanta Barbara)

Block copolymer self-assembly and asymptotics-based algorithms for electronic structure computations

Lunch.

14:30 - 15:00 Machiko Ode (NIMS)

Recent theoretical developments in phase-field model

15:00 - 15:30 Akinori Yamanaka (Tokyo Institute of Technology)

Modeling of mechanical response and microstructure evolution in steel by using phase-field method and image-based finite element method

Tea.

16:00 - 16:30 Giuseppe de Nittis (Université de Cergy-Pontoise)

Bloch Theory for Quasicrystals

16:30 - 17:20 Jean Bellissard (Georgia Institute of Technology)

Atomic Motion and Transverse Geometry of Tiling Spaces

• The Annual Workshop of WPI-AIMR will be held at the Sendai International Center from 20th Feb. to 23rd Feb.

(<http://www.wpi-aimr.tohoku.ac.jp/workshop2012/>)

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