

Inverse Problems and Medical Imaging

Date: February 13 (Tue.) – February 16 (Fri.), 2018

**Venue: Room 123, Graduate School of Mathematical Sciences, Komaba Campus,
The University of Tokyo**

Supported by the A3 Foresight Program “Modeling and Computation of Applied Inverse Problems” (JSPS, NSFC, NRF) and Grant-in-Aid for Scientific Research (S) 15H05740 (JSPS).

Program

February 13 (Tue.)

13:20-13:30 Opening address

13:30-14:15 June-Yub Lee (Ewha Womans University)

Quasi-periodic scattering problems with material junction points using a fast direct numerical method

14:15-15:00 Xiang Xu (Zhejiang University)

TBA

15:00-15:30 Group photo & coffee break

15:30-16:15 Yoko Hoshi (Hamamatsu University School of Medicine)

What is the primary bottleneck in developing diffuse optical tomography?

16:15-17:00 Won-Kwang Park (Kookmin University)

Application of direct sampling method in microwave tomography: analysis, feasibilities and limitations

17:00-18:00 Free discussion

18:00-19:30 Banquet (common room)

February 14 (Wed.)

- 10:00-10:45 Guanghai Hu (Beijing Computational Science Research Center)
Inverse source problems for time-dependent wave equations
- 10:45-11:30 Luca Lorenzi (University of Parma)
TBA
- 11:30-13:30 Lunch break
- 13:30-14:15 Chang-Ock Lee (KAIST)
Three-dimensional volume reconstruction using two-dimensional parallel slices
- 14:15-15:00 Jae Sung Lee (Seoul National University)
Deep learning for nuclear medicine image correction and analysis
- 15:00-15:30 Coffee break
- 15:30-16:00 Soomin Jeon (KAIST)
Review of frameworks for scatter suppression in X-ray CT
- 16:00-16:30 Chang Min Hyun (Yonsei University)
Deep learning for undersampled MRI reconstruction
- 16:30-17:00 Kang Cheol Kim (Yonsei University)
Machine-learning-based automatic identification of fetal abdominal circumference from ultrasound images

February 15 (Thu.)

- 10:00-10:45 Manabu Machida (Hamamatsu University School of Medicine)
Optical tomography with structured illumination based on the radiative transport equation
- 10:45-11:30 Goro Nishimura (Hokkaido University)
Diffuse correlation spectroscopy: analysis of moving particles
- 11:30-13:30 Lunch break
- 13:30-14:15 Jin Cheng (Fudan University / Shanghai University of Finance and Economics)
TBA
- 14:15-15:00 Cheng Hua (Fudan University)
What is the difference between straight and spiral cochlea model
- 15:00-15:30 Coffee break
- 15:30-16:15 Dinghua Xu (Zhejiang Sci-Tech University / Shanghai University of Finance and Economics)
A space-fractional heat-moisture transfer model and textile parameter determination problems
- 16:15-17:00 Zhiyuan Li (Shandong University of Technology)
Unique continuation principle for the time-fractional diffusion equation

February 16 (Fri.)

- 10:00-10:45 Takaaki Nara (The University of Tokyo)
A direct method for magnetic resonance electrical property tomography (MREPT)
- 10:45-11:30 Masaaki Uesaka (Hokkaido University)
A discrete total variation flow with rotation matrix-valued function coming and directional data processing in crystal structure
- 11:30-13:30 Lunch break
- 13:30-14:15 Takeaki Shimokawa (ATR)
Hierarchical Bayesian diffuse optical tomography for task-evoked and resting-state brain imaging
- 14:15-15:00 Shinpei Okawa (National Defense Medical College)
Quantitative photoacoustic image reconstruction with linearization and l_1 -norm minimization
- 15:00-15:30 Coffee break
- 15:30-16:15 Masayuki Umemura (University of Tsukuba)
Hybrid scheme for resonant line transfer
- 16:15-17:00 Yoshifumi Saijo (Tohoku University)
Clinical significance of sound speed imaging