

4th International Symposium on Kumamoto Synchrotron Radiation (ISKSR4): Cooperation of Experiments and Computer Sciences – The 1st IROAST Seminar –

Sponsor: International Research Organization for Advanced Science and Technology
(IROAST), Kumamoto University

Date and Time: **15 May 2017 (Mon), 13:00 – 17:50**

Place: D201 Lecture Room, Faculty of Science, Kumamoto University

Address: 2-39-1 Kurokami, Chuo-ku, Kumamoto 860-8555, Japan

Scope

We are planning to build a new synchrotron radiation (SR) beamline (Kumamoto University MAcro-MOlecular Nano- Pico-Time-Resolved BeamLine, KUMAMON-PTR-BL) at Saga Light Source in Tosu, Japan. This symposium is the fourth *international* scientific meeting concerning the SR-related science.

Recent developments of SR and X-ray free electron laser facilities produce remarkable progresses in the quality of experimental data. In conjunction with them, new varieties of the data sets appear, such as two-dimensional images etc. and the corresponding data volumes explosively increase. The present task for researchers is how to extract scientifically valuable information from the experimental data of huge size in quantity but of still insufficient in quality. Thus, combined and integrated works of solid-state physics and computer science are essential for the data analysis using e.g., Inverse problem, Bayesian inference with Metropolis' algorithm (reverse Monte Carlo modeling) and some others. Furthermore, the data-driven science such as Sparse modeling is a very promising tool for handling the data.

For this symposium, we invited four distinguished researchers who are investigating such data analyses and data-driven science. Some young scientists also present their own works concerning cooperation of experiments and computer sciences.

Program

Chairperson: J. R. Stellhorn

13:00-13:10

Opening address by Prof. T. Hiyama (Director of IROAST, Kumamoto University)

13:10-13:50

Prof. Laszlo Pusztai, Invited (IROAST Distinguished Professor; Hungarian Academy of Sciences)

"Determining the structure of hydrogenous materials by polarized neutron diffraction"

13:50-14:20

Dr. Jens Rüdiger Stellhorn, Invited (Department of Physics, Kumamoto University)

"A combination of anomalous x-ray scattering and x-ray absorption fine structure experiments with reverse Monte Carlo modeling for the characterization of amorphous GeCuTe"

(Break)

Chairperson: F. Shimojo

14:40-15:20

Prof. Ichiro Akai, Invited (Institute of Pulsed Power Science, Kumamoto University)

"Sparse modeling of extended x-ray absorption fine structures"

15:20-15:40

Mr. Tsubasa Tobase (Department of Earth Science, Kumamoto University)

"XAFS study on minor elements (Ti and Zr) in K-Pg and D-C boundary sediments: record of natural cataclysms"

15:40-16:20

Prof. Shinya Hosokawa, Invited (Department of Physics, Kumamoto University)

"Analysis of x-ray fluorescence holography data using sparse modeling on Mn-doped Bi₂Te₃ topological insulator"

(Break)

Chairperson: Y. Nakajima

16:40-17:00

Mr. Yoshimitsu Miyashita (Department of Physics, Kumamoto University)
"Application of sparse modeling to cosmic magnetism study"

17:00-17:20

Mr. Benedict Paulus (Department of Physics, Kumamoto University; Department of Chemistry, University of Marburg)
"TBA"

17:20-17:40

Mr. Masaaki Misawa (Department of Physics, Kumamoto University)
"Tensile amorphization of high-pressure crystalline phases of magnesium silicate $MgSiO_3$ "

17:40-17:50

Closing remarks

19:00-21:00

Free discussion at somewhere in Kumamoto city (Place will be given later at the seminar site.)

Important Dates

30 April 2017 Submission of Titles and Author lists for presenters

10 May 2017 Submission of Abstracts (A4 one page, pdf file, Format free)

Please send to hosokawa@sci.kumamoto-u.ac.jp

Organizers

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