



2014 A3 Foresight Program Conference on Modeling and Computation of Applied Inverse Problems

Place	International Convention Center, Jeju, Korea
Conference Days	November 20–23, 2014
Organizers	Gang Bao, Masahiro Yamamoto, Jin Keun Seo
Conference Scope	<p>Through this conference, we hope to provide the scientific community and opportunity to achieve consolidation and identify new challenges and the most promising directions for progress. The conference will focus on mathematical models, imaging methodologies, and computational algorithms in the area of computational inverse problems. Experience over the past three decades has shown that finding solutions with practical significance and value requires an in-depth understanding of both the underlying physical phenomena with data acquisition systems as well as the implementation details of computational algorithms with mathematical analyses. Due to these heavy requirements, it is very difficult for one scientist to possess full knowledge spanning physical properties, data acquisition processes, and modeling with analyses towards proof of feasibility. The symbiotic interplay among theoretical mathematics, computational mathematics, and experimentation is crucial to understand and solve these realistic model problems. To deal with these challenging issues, we will meet to share experiences and suggestions, focusing on the following areas:</p> <ul style="list-style-type: none">What we know from our experiencesWhat we do not know yetWhat applications are promisingWhat we should do to facilitate technical progress



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November 20–23, 2014

Schedule			
November 20	16:00 – 18:00	A3 Conference Registration & Medical Imaging Meeting	ICC Room 303B
November 21	09:10 – 10:00	EIT Team Meeting	
	12:00 – 13:00	Lunch	Restaurant 3F / Delizia
	13:00 – 17:30	Free Discussion	
	17:30 – 18:00	A3 Committee Meeting	ICC Room 303B
	18:00 – 20:00	Welcome Reception	Restaurant 3F / Delizia
November 22	10:30 – 12:00	A3 Meeting (Chinese Team Presentation)	ICC Room 303B
	12:00 – 15:00	Lunch & Break	Restaurant 3F / Delizia
	15:00 – 16:20	A3 Meeting (Japanese Team Presentation)	
	16:20 – 16:40	Coffee Break	
	16:40 – 18:00	A3 Meeting (Korean Team Presentation)	
	18:00 – 20:00	Banquet (with KSIAM)	Restaurant 5F / Ocean View
November 23	09:00 – 11:00	Free Discussion & Announcement of next meeting	ICC Room 301B
	11:00 – 12:30	Lunch & Discussion	



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Saturday, November 22

10:30 – 12:00	Chinese Team Presentation (Chair Gang Bao)	ICC Room 303B
	<p>Gang Bao (Professor, Zhejiang University) TBA</p> <p>Jijun Liu (Professor, Southeast University) Inverse scattering problems and media imaging</p> <p>Yongming Yang (Professor, Fudan University) Numerical investigation of a bubble in another fluid</p> <p>Shuai Lu (Professor, Fudan University) Multifrequency inverse source problems</p> <p>Zhi Lin (Professor, Zhejiang University) Pollution Propagation and Related Inverse Problems in Urban Environments</p> <p>Xiang Xu (Professor, Zhejiang University) Inverse random source problems in nanomaterials</p>	
12:00 – 15:00	Lunch & Break	
15:00 – 16:20	Japanese Team Presentation (Chair Masahiro Yamamoto)	
	<p>Masahiro Yamamoto (Professor, The Univ. of Tokyo) Fractional diffusion equations and inverse problems</p> <p>Masato Kimura (Professor, Kanazawa Univ) Numerical and mathematical analysis of moving boundary problems</p> <p>Takaaki Nara (Professor, The Univ. of Tokyo) Algebraic reconstruction of current multipoles for biomagnetic inverse source problems</p> <p>Hiroshi Fujiwara (Professor, Kyoto University) Numerical Analysis of the Radiative Transfer Equation for Medical Imaging</p> <p>Yutaka Kamimura (Professor, Tokyo University of Marine Science and Technology) Mathematical analysis of some inverse problems through integral equations</p> <p>Takashi Ohe (Professor, Okayama Sci. Univ.) Numerical reconstruction of solutions in inverse problems for partial differential equations</p> <p>Ryuichi Ahino (Professor, Osaka Kyoiku Univ.) Blind source separation using wavelet analysis</p>	



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Saturday, November 22

- 16:20	Japanese Team Presentation (Chair Masahiro Yamamoto)	ICC Room 303B
	<p>Fumio Kojima (Professor, Kobe Univ.) Stochastic Inverse Analysis for Nondestructive Evaluation using Generalized Polynomial Chaos</p> <p>Toshitake Kohno (Professor, The Univ. of Tokyo) To be announced</p> <p>Yikan Liu (Graduate Student, The Univ. of Tokyo) Various topics on multiple hyperbolic equations and fractional diffusion equations</p> <p>Zhiyuan Li (Graduate Student, The Univ. of Tokyo) Asymptotic estimates of solutions to initial-boundary-value problems for time-fractional diffusion equations of distributed orders</p> <p>Tomoro Asai (Post-Doctor, The Univ. of Tokyo) Mathematical analysis on Mullins' model for thermal grooving</p> <p>Kazutoshi Taguchi (Graduate Student, The Univ. of Tokyo) On total variation flow in color image denoising</p> <p>Masaaki Uesaka (Researcher, The Univ. of Tokyo) Homogenization in a thin layer with an oscillating interface and highly contrast coefficients</p>	
16:20 – 16:40	Coffee Break	
16:40 – 18:00	Korean Team Presentation (Chair Jin Keun Seo)	
	<p>Jin Keun Seo (Professor, Yonsei Univ.) Current Researches in Medical Image Computing group at Yonsei university</p> <p>Eung Je Woo (Professor, Kyung Hee Univ.) Electrical Impedance Imaging and Its Applications</p> <p>June-Yub Lee (Professor, Ewha Womans Univ.) Fast numerical algorithms for scattering problems and more</p> <p>Jong Chul Ye (Professor, KAIST) Introduction to biomedical imaging and signal processing research at KAIST</p> <p>Hae-Jeong Park (Professor, Yonsei Univ.) Challenges in Functional Brain Network Analysis</p> <p>Jae Sung Lee (Professor, Seoul National Univ.) PET and Hybrid Imaging and Computation</p>	



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Saturday, November 22

- 18:00	Korean Team Presentation (Chair Jin Keun Seo)	ICC Room 303B
	Chang-Ock Lee (Professor, KAIST) What's going on in the Computational Mathematics and Imaging Lab. of KAIST	
18:00 - 20:00	Dinner Party	