

# The International Workshop on Nonlinear Analysis and Convex Analysis

Research Institute for Mathematical Sciences, Kyoto University  
Oiwake-town Kita-Shirakawa, Sakyou-ward, Kyoto-city, JAPAN

This Workshop is qualified by Research Institute for Mathematical Sciences as one of the series of important mathematical research activities in 2016. Everyday session begins at 9:05 at Room 420 on the fourth floor in the inside of the building for RIMS.

Directed by Wataru Takahashi(Keio University and Kaohsiung Medical University) and organaized by Shigeo Akashi(Tokyo Univ. of Science) and Mitsuhiro Hoshino(Akita Pref. Univ.)

Please refer to <http://www.kurims.kyoto-u.ac.jp/~kyodo/workshop-en.html>

## August 31 (Wednesday)

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|---------------|---|
| 9:05 ~ 9:10   | Wataru Takahashi*(Keio Univ. and Kaohsiung Medical Univ.)<br>Opening Address  |
| 9:10 ~ 9:55   | Hang-Chin Lai*(National Tsing Hua Univ., Taiwan)<br>Introductory on Optimization Analysis involving Set Variable Functions  |
| 9:55 ~ 10:30  | Yasunori Kimura*(Toho Univ.)<br>Resolvents of convex functions and the shrinking projection method on geodesic spaces   |
| 10:30 ~ 10:40 | Tea Break   |
| 10:40 ~ 11:25 | Do Sang Kim*(Pukyong National Univ., Korea)<br>Zhe Hong(Pukyong National Univ., Korea)<br>Optimality and duality for a class of nonsmooth fractional multiobjective optimization problems   |
| 11:25 ~ 12:00 | Koji Aoyama*(Chiba Univ.)<br>An iterative method for generalized split feasibility problems   |
| 12:00 ~ 13:10 | Lunch Break   |
| 13:10 ~ 13:55 | Lu-Chuan Ceng(Shanghai Normal Univ., China)<br>Jen-Chih Yao*(China Medical Univ., Taiwan)<br>Generalized vector equilibrium-like problems with applications to vector optimization problems |
| 13:55 ~ 14:40 | Yeong-Cheng Liou(Kaohsiung Medical Univ., Taiwan)<br>Ching-Feng Wen*(Kaohsiung Medical Univ., Taiwan)<br>On generalized vector equilibrium-like problems                                    |
| 14:40 ~ 14:50 | Tea Break   |
| 14:50 ~ 15:25 | Satoshi Suzuki*(Shimane Univ.)  |

- Daishi Kuroiwa(Shimane Univ.)  
Nonlinear error bounds in terms of generators of quasiconvex functions
- 15:25 ~ 16:00 Nobusumi Sagara\*(Hosei Univ.)  
Relaxation and purification for nonconvex variational problems in dual Banach spaces: The minimization principle in saturated measure spaces
- 16:00 ~ 16:45 Wataru Takahashi\*(Keio Univ. and Kaohsiung Medical Univ.)  
Weak and strong convergence theorems for new nonlinear mappings in Hilbert spaces and Banach spaces and applications
- 18:00 ~ 20:30 Welcome Party

### September 1 (Thursday)

- 9:05 ~ 9:10 Announcement
- 9:10 ~ 9:55 Sehie Park\*(The National Academy of Sciences and Seoul National Univ., Korea)  
The use of weak topologies in the KKM theory
- 9:55 ~ 10:30 Fumiaki Kohsaka\*(Tokai Univ.)  
Common fixed points of two commutative hybrid mappings in Hilbert spaces
- 10:30 ~ 10:40 Tea Break
- 10:40 ~ 11:25 Chih Sheng Chuang(National Sun Yat-Sen Univ., Taiwan)  
Lai-Jiu Lin\*(National Changhua Univ. of Education, Taiwan)  
Zenn-Tsun Yu(Nan Kai Univ. of Tech., Taiwan)  
The hybrid steepest decent method for some nonlinear problems in Hilbert spaces
- 11:25 ~ 12:00 Mitsuhiro Hoshino\*(Akita Prefectural Univ.)  
On a learning late factor and extent of ordering in basic self-organizing maps
- 12:00 ~ 13:10 Lunch Break
- 13:10 ~ 13:55 Jong Soo Jung\*(Dong-A Univ., Korea)  
Strong convergence theorems for accretive operators and nonexpansive mappings in Banach spaces
- 13:55 ~ 14:30 Takanori Ibaraki\*(Yokohama National Univ.)  
Shrinking projection methods with error for fixed point problems
- 14:30 ~ 14:40 Tea Break
- 14:40 ~ 15:25 Kichi-Suke Saito\*(Niigata University)  
Naoto Komuro(Hokkaido University of Education)  
Ryotaro Tanaka(Kyushu University)  
Rotation invariant norms on  $\mathbb{R}^2$  and geometric constants
- 15:25 ~ 16:00 Sachiko Atsushiba\*(Univ. of Yamanashi)  
Common Acute Points and Convergence Theorems for Families of Nonlinear Mappings
- 16:00 ~ 16:45 Mau-Hsiang Shih\*(China Medical University Hospital, Taiwan)  
Helly numbers for convex sets in topological vector space

## September 2 (Friday)

- 9:05 ~ 9:10      Announcement
- 9:10 ~ 9:55      Hong-Kun Xu\*(Hangzhou Dianzi Univ., China)  
The Frank-Wolfe algorithm and its generalizations for optimization
- 9:55 ~ 10:30      Yuto Ogata\*(Niigata Univ.)  
Yutaka Saito(Niigata Univ.)  
Tamaki Tanaka(Niigata Univ.)  
Gue Myung Lee(Pukyong National Univ., Korea)  
Jae Hyoung Lee(Pukyong National Univ., Korea)  
Generalized alternative theorems based on set-relations and its application
- 10:30 ~ 10:40      Tea Break
- 10:40 ~ 11:25      Yi-Chou Chen\*(National Army Academy, Taiwan)  
New Cyclic Contraction Maps on Metric Spaces
- 11:25 ~ 12:00      Yukio Takeuchi\*(Takahashi Institute for Nonlinear Analysis)  
An iteration scheme finding a common fixed point of commuting two nonexpansive mappings in uniformly convex Banach spaces
- 12:00 ~ 13:10      Lunch Break
- 13:10 ~ 13:45      Shoichi Kamada\*(Kumamoto Univ.)  
Koichiro Naito(Kumamoto Univ.)  
Construction of lattice based cryptosystems by simultaneous approximation problems in  $p$ -adic numberlands
- 13:45 ~ 14:20      Shin-ya Matsushita\*(Akita Prefectural Univesity)  
Li Xu(Akita Prefectural Univesity)  
On convergence of the fixed point iterations
- 14:20 ~ 14:30      Tea Break
- 14:30 ~ 15:05      Toshiharu Kawasaki\*(Tamagawa Univesity)  
Masashi Toyoda(Tamagawa Univesity)  
Existence of solutions of initial value problems for singular fractional differential equations
- 15:05 ~ 15:40      Kazuki Seto\*(Shimane Univ.)  
Daishi Kuroiwa(Shimane Univ.)  
An observartion of arcwise connected cone-quasiconvexity for set-valued maps by arcwise connected connected cone-quasiconvexity
- 15:40 ~ 16:15      Shigeo Akashi\*(Tokyo University of Science)  
Yasushi Kikuchi(Tokyo University of Science)  
The asymptotic behavior of iterated expansive-mapping systems
- 16:15 ~ 16:20      Closing Address