

数理解析研究所講究録 1611

非線形解析学と凸解析学の研究

京都大学数理解析研究所

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*Nonlinear Analysis and Convex Analysis*

*September, 2008*

*Research Institute for Mathematical Sciences*

*Kyoto University, Kyoto, Japan*

This is a report of research done at the Research Institute for Mathematical Sciences, Kyoto University. The papers contained herein are in final form and will not be submitted for publication elsewhere.

# Official Program of Annual International Workshop on Nonlinear Analysis and Convex Analysis

## KYOTO UNIVERSITY

Oiwake-chou Kita-Shirakawa, Sakyou-ku, Kyoto-shi

This Workshop is officially approved by Kyoto University and financially supported by Research Institute for Mathematical Sciences attached to Kyoto University.

Directed by Wataru Takahashi(Tokyo Institute of Technology)  
and organized by Shigeo Akashi(Tokyo University of Science)

Date: The workshop begins at 9:00 on the 3rd of September and it ends at 15:10 on the 5th.

Place: This workshop is held at Room 115 located on the grand floor  
of Research Institute of Mathematical Sciences attached to Kyoto University.

As for the conference venue, please refer to [www.kurims.kyoto-u.ac.jp/en/access-01.html](http://www.kurims.kyoto-u.ac.jp/en/access-01.html).

September 3(Monday)

- |             |   |
|-------------|---|
| 9:00~9:30   | Hang-Chin Lai (Chung Yuan Christian University)<br>Minimax Programming in Complex Space   |
| 9:30~10:00  | Wataru Takahashi (Tokyo Institute of Technology)<br>Nonlinear Ergodic Theorems for Nonexpansive Semigroups in Banach Spaces   |
| 10:00~10:30 | Syuuji Yamada, Tamaki Tanaka (Niigata University)<br>and Tetsuzo Tanino (Osaka University)<br>A Successive Approximation Method for Solving Lipschitz Optimization Problems |
| 10:30~10:40 | Tea Break   |
| 10:40~11:10 | Do Sang Kim, Hyo Jung Lee and Yu Jung Lee(Pukyong National University)<br>Multiobjective Fractional Programming with Ratio Invexity   |
| 11:10~11:40 | Toshihiko Nishishiraho (University of Ryukyus)<br>Approximation Processes of Bernstein-type Operators   |
| 11:40~12:10 | Hidefumi Kawasaki and Jun-ichi Sato (Kyushu University)<br>Discrete Fixed Point Theorems and Their Application to the Game Theory   |
| Lunch Time  |   |
| 13:20~13:50 | Somyot Plubtieng (Naresuan University)<br>Solution of Equilibrium Problems and the Fixed Points of Nonlinear Mappings   |
| 13:50~14:20 | Daishi Kuroiwa (Shimane University)<br>On Derivatives of Set-valued Maps in Set Optimization  |
| 14:20~14:50 | Satoshi Suzuki and Daishi Kuroiwa (Shimane University)<br>Characterizing Set Containments with Quasiconvex Inequalities   |
| 14:50~15:00 | Tea Break   |
| 15:00~15:30 | Lai-Jiu Lin and Chih-Sheng Chuang (National Changhua University of Education)<br>Systems of Nonempty Intersection Theorem with Applications                                 |
| 15:30~16:00 | Takamitsu Yamauchi (Shimane University)<br>On the Existence of Continuous Selections Avoiding Extreme Points  |
| 16:00~16:30 | Sachiko Atsushiba (Shibaura Institute of Technology)<br>Convergence Theorems for a Family of Relatively Nonexpansive Mappings   |
| 16:30~17:00 | Mau-Hsiang Shih (National Taiwan Normal University)<br>Fritz John's Ellipsoid Theorem: simpler proof and applications   |

September 4th(Tuesday)

- 9:00~9:30 Sehie Park (Seoul National University)  
A Survey on Fixed Point Theorems in Generalized Convex Spaces II
- 9:30~10:00 Masao Fukushima (Kyoto University)  
Semismooth Methods for Linear and Nonlinear Second-Order Cone Programs
- 10:00~10:30 Fumiaki Kohsaka (Tokyo Denki University)  
and Wataru Takahashi (Tokyo Institute of Technology)  
On Fixed Points of Semicontractive Mappings in Banach Spaces
- 10:30~10:40 Tea Break
- 10:40~11:10 Suthep Suantai (Chiang Mai University)  
Common Fixed Points of Finite Family Quasi-nonexpansive Mappings in Banach Spaces
- 11:10~11:40 Tetsuzo Tanino (Osaka University)  
One-Point Solutions Obtained from Best Approximation Problems for Cooperative Games
- 11:40~12:10 Saburo Saitoh and Masato Yamada (Gunma University)  
Nonlinear Transforms and the Theory of Reproducing Kernels

Lunch Time

- 13:20~13:50 Jong Kyu Kim and Kyung Soo Kim (Kyungnam University)  
Convergence Theorems of Implicit Iterative Sequences for a Finite Family of Asymptotically Quasi-Nonexpansive Type Mappings
- 13:50~14:20 Yasunori Kimura (Tokyo Institute of Technology)  
An Equilibrium Problem and Approximation of Its Solutions
- 14:20~14:50 Ken-Ichi Mitani (Niigata Institute of Technology), Kichi-Suke Saito (Niigata University) and Tomonari Suzuki (Kyushu Institute of Technology)  
The James Constant of Absolute Norms on  $\mathbb{R}^2$  II
- 14:50~15:00 Tea Break
- 15:00~15:30 Shyh Nan Lee(Chun Yuan Christian University)  
and Mau-Hsiang Shih (National Taiwan Normal University)  
Octahedral Projection
- 15:30~16:00 Tomonari Suzuki (Kyushu Institute of Technology)  
Meir-Keeler Contraction and L-function
- 16:00~16:30 Takayuki Tamura(Chiba University) Mikio Kato (Kyushu Institute of Technology) and Yasuji Takahashi (Okayama Prefectural University)  
On Infinite Dimensional von Neumann-Jordan Type Constants for Banach Spaces
- 16:30~17:00 Jen-Chih Yao (National Sun Yat-sen University)  
Solution Methods of Variational Inequalities with Pseudomonotone Operators

September 5th(Wednesday)

- 9:00~9:30 Sompong Dhompongsa (Chiang Mai University, Thailand)  
Generalized James Constant and Fixed Point Theorems for Multivalued Nonexpansive Mappings
- 9:30~10:00 Hidetoshi Komiya (Keio University)  
Inequality Comparisons and the Minimax Theorem
- 10:00~10:30 Shin-ya Matsushita (Matsue National College of Technology)  
and Wataru Takahashi (Tokyo Institute of Technology)  
Existence Theorems for Nonlinear Operators in Banach Spaces
- 10:30~10:40 Tea Break
- 10:40~11:10 Chin-Tzong Pang (Yuan Ze University)  
and Mau-Hsiang Shih (National Taiwan Normal University)  
Simultaneous Schur Stability of Interval Matrices
- 11:10~11:40 Koichiro Naito (Kumamoto University)  
Chaotic Properties of Discrete Dynamical Systems Given by the Gauss Map

11:40~12:00 Yousuke Araya and Tamaki Tanaka (Niigata University)  
Existence of Vector Equilibria via Ekeland's Variational Principle and Its Application

Lunch Time

13:10~13:40 Attapol Kaewkhao (Burapha University)

Some Geometric Conditions and Some Fixed Point Theorems

13:40~14:10 Seiji Saito (Doshisha University), Hiroaki Ishii (Osaka University),

Kuang-Yih Yeh and Hao-Ching Hsia (National Cheng Kung University)

Shortest Paths in Free Spaces Including Obstacles with Fuzzy Boundaries

14:10~14:40 Yutaka Kimura, Mitsuhiro Hoshino (Akita Prefectural University),

Aoi Sato (Miraiya Shoten Co. Ltd.) and Mariko Fujiwara (Akita City Library)

A Library Applications by Quantification Analysis

14:40~15:10 Mitsuhiro Hoshino and Yutaka Kimura (Akita Prefectural University)

Quasi-convexity of Model Function and Ordering Process in Self-organizing Maps

非線形解析学と凸解析学の研究  
 Nonlinear Analysis and Convex Analysis  
 RIMS 研究集会報告集

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 研究代表者 明石 重男 (Shigeo Akashi)

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