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経 済 の 数 理 解 析

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Preface

This volume is a collection of papers presented at the symposium on mathematical economics sponsored by the Research Institute for Mathematical Sciences, Kyoto University, which was held during November 29 ~ December 1, 2002.

On behalf of the programme committee, I would like to extend my cordial thanks to all the participants of the symposium for their sincere and constructive contributions to our project.

We can safely say that mathematical reasonings have been playing a much more indispensable roles in economic theory than in any other discipline of social sciences. There seems to be several reasons which have endowed economic theory with peculiar mathematical characters.

First of all, many economic phenomena permit expressions in terms of quantitative languages.

We have also to take account of the fact that an economy consists of a huge number of sectors which are entangled in a complex manner. Economic phenomena result from the interactions of these interdependent component sectors. Their mutual relation is so complicated that an ordinary language and a casual way of thinking have only very limited abilities to describe and analyze economic phenomena. It is quite easy for anyone to imagine serious confusions which would result if we had recourse exclusively to ordinary languages and casual reasonings. Although mathematical reasonings may sometimes seem too round-about for our purposes, it certainly provides economists with simple and efficient analytical weapons.

Furthermore economists have been suffering from the difficulty of controlled experiments in their researches. That is exactly why much importance has been attached to rigorous speculative experiments in economic theory. So called "axiomatic method" developed in Vienna during the inter-war period should be regarded as being promoted by the same view and recognition under the influence of D. Hilbert.

I would be pleased very much if our symposium could contribute to widening and deepening of the mathematical foundations in economic theory.

Toru Maruyama

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目次 (*speaker)

I. Analytical Foundations of Economic Theory	
1. Traveling Waves in Spatially Random Media -----	1
東大・数理科学	侯野 博 (Hiroshi Matano)
2. EXISTENCE OF LIMIT CYCLES FOR COUPLED VAN DER POL EQUATIONS --10	
横浜国大・工	平野 載倫 (Norimichi Hirano)*
Nicholas Copernicus Univ.	Slawomir Rybicki
3. APPROXIMATION OF FIXED POINTS AND PROXIMAL POINT ALGORITHMS--19	
東工大・情報理工学	高橋 渉 (Wataru Takahashi)
4. When To Stop Accumulating Reward / Cost -----	32
九大・経済学	岩本 誠一 (Seiichi Iwamoto)
5. Approximate Maximization Theorems -----	44
神戸大・経済学	入谷 純 (Jun Iritani)*
”	宮川 敏治 (Toshiji Miyakawa)
II. Aspects of Equilibrium Theory	
6. Note on homotopy and index in incomplete markets -----	56
東大・経済学	茂見 岳志 (Takeshi Momi)
7. Unlinked Allocations in an Exchange Economy with One Good and One Bad -----	70
Univ. of Cambridge / 一橋大・経済研	原 千秋 (Chiaki Hara)
8. Inefficiency of Incomplete Markets: Nominal Asset Case -----	81
早大・政治経済	永田 良 (Ryo Nagata)
III. Dynamic Macro-economic Theory	
9. Characterization of a Chaotic Economic Dynamics by Unstable Periodic Solutions	
— An Application to a Generalized Goodwin Model -----	92
東大・数理科学	石山 健一 (Ken-ichi Ishiyama)*
”	斉木 吉隆 (Yoshitaka Saiki)
0. Backward Bifurcation in a HIV / AIDS Epidemic Model with Age Structure II	
The Case of General Transmission Rate -----	103
東大・数理科学	稲葉 寿 (Hisashi Inaba)

1 1.	Targeting Debt: Some Implications for Growth and Inflation -----	112
	関西大・経済	工藤 教孝(Noritaka Kudoh)
1 2.	A Model of Growth with the Size Distribution of Firms and Economies of Scale ----	129
	神戸大・経済学	足立 英之(Hideyuki Adachi)
1 3.	Adaptive expectation generates the Harrodian Instability -----	166
	慶應大・経済学	加藤 寛之(Hiroyuki Kato)
IV. Mathematical Finance		
1 4.	Summary of The Fokker-Planck Equation Approach to Asset Price Fluctuations -----	176
	早大・政治経済	田中 久稔(Hisatoshi Tanaka)
1 5.	Stock Price Process and Statistical Mechanics -----	191
	日大・文理	黒田 耕嗣(Koji Kuroda)
1 6.	Approximation of Expectation of Diffusion Processes based on Lie Algebra and Malliavin Calculus -----	205
	東大・数理科学	楠岡 成雄(Shigeo Kusuoka)
V. Game Theory		
1 7.	Core equivalence in economy under generalized information -----	210
	茨城工業高専	松久 隆(Takashi Matsuhisa)*
	一橋大・経済学	石川 竜一郎(Ryuichiro Ishikawa)
	香川大・経済	星野 良明(Yoshiaki Hoshino)
1 8.	Tractable Co-operative Game and Intractable Co-Operative Game Arising from Combinatorial Optimization Problems -----	224
	早大・商	毛利 裕昭(Hiroaki Mohri)
1 9.	Games with Bilateral Contracts on Side Payments -----	230
	一橋大・経済学	山田 玲良(Akira Yamada)
VI. Historical Perspectives of Economic Theory		
2 0.	The Synthetic A Priori Propositions in Carl Menger's <i>Grundsätze der Volkswirtschaftslehre</i> -----	242
	防衛大学校	武藤 功(Isao Mutoh)