

Preface

This book is based on lectures given at the conference “Stochastic analysis and the related topics” held at RIMS, Kyoto University in Sept. 4-7, 2002, which is the biggest meeting of RIMS International Project (Research), 2002. The conference consisted of three sessions on Stochastic analysis and a special session celebrating of Professor Kiyosi Itô on the occasion of *Beiju*. It means 88th birthday in Japanese. Actually on Sept. 7th, 2002, Kiyosi Itô celebrated his 88th birthday counting ages in the traditional way or his 87th birthday counting in the western way.

Kiyosi Itô was a professor of Kyoto University during 1952-1979. There he brought up a number of students. In the meantime he often visited United States and European countries, where he encountered some friends, colleagues and students. In the ceremonial session, the organizing committee invited, both from foreign countries and from Japan, 11 mathematicians who had a close relationship with Kiyosi Itô for a long time. We regret that we missed many friends of him, whom he might have wished to meet in Kyoto.

Topics of sessions on Stochastic analysis that we selected were Mathematical finance, Markov processes and Malliavin calculus. These sessions are by no means independent of the ceremonial session. Itô's stochastic calculus initiated in 1942 by himself alone is now recognized widely as a most fundamental theory in Stochastic analysis. We cannot talk about Mathematical finance without Itô's formula. Itô's stochastic differential equation is a key object in the theory of Markov process and Malliavin calculus. We invited another 11 mathematicians who are working now actively in these fields of stochastic analysis.

Members of the organizing committee of the conference were Masatoshi Fukushima, Shigeo Kosuoka, Hideo Nagai, Ichiro Shigekawa and ourselves. Takashi Kumagai worked for the preparation of the conference as a secretary. We thank them all. It is ultimately Professor Itô himself whom we wish to thank; our great teacher. *Arigatô gozaimasu.*

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Hiroshi Kunita
Yoichiro Takahashi

Kyoto, September 2003

All papers in this volume have been refereed and are in final form. No version of any of them will be submitted for publication elsewhere.