

Preface

This volume is the product of the first conference of the Seasonal Institute of the Mathematical Society of Japan titled,

“Probabilistic Approach to Geometry”
28th July 2008 – 8th August 2008
Kyoto University, Japan.

The conference was organized by the Society’s committee — Motoko Kotani (Tohoku University), Hitoshi Arai (University of Tokyo), Takashi Kumagai (Kyoto University) and Karl-Theodor Sturm (Universität Bonn) — in collaboration with the local organizing committee at Kyoto University — Takashi Kumagai, Masanori Hino, Tsuyoshi Kato and Shin-ichi Ohta.

The conference focused on the interaction between Geometry and Probability Theory, and the development of new directions in both research fields. To achieve this aim, survey lectures were given by leading researchers in one of the following four themes selected by the organizers:

Rough Path Analysis:

Shigeki Aida (Osaka University),
Terry J. Lyons (University of Oxford)

Theory of Random Groups:

Yann Ollivier (École Normale Supérieure de Lyon)

Heat Kernel Analysis:

Laurent Saloff-Coste (Cornell University)

Mass Transport Problems:

Cédric Villani (École Normale Supérieure de Lyon)

Based on these themes, thirty-three invited talks and thirteen contributed talks were also presented along with active and fruitful discussions by the 180 participants, one third of whom were from abroad.

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of the participants and speakers for making the conference so successful.

Editors:

Motoko Kotani (Tohoku University)

Masanori Hino (Kyoto University)

Takashi Kumagai (Kyoto University)

*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.*