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Bo'az Klartag • Emanuel Milman
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Geometric Aspects of Functional Analysis

Israel Seminar (GAFA) 2011-2013

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Editors

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Preface

Since the mid-1980s, the following volumes containing collections of papers reflecting the activity of the Israel Seminar in Geometric Aspects of Functional Analysis have appeared:

- 1983–1984 Published privately by Tel Aviv University
- 1985–1986 Springer Lecture Notes in Mathematics, vol. 1267
- 1986–1987 Springer Lecture Notes in Mathematics, vol. 1317
- 1987–1988 Springer Lecture Notes in Mathematics, vol. 1376
- 1989–1990 Springer Lecture Notes in Mathematics, vol. 1469
- 1992–1994 Operator Theory: Advances and Applications, vol. 77, Birkhäuser
- 1994–1996 MSRI Publications, vol. 34, Cambridge University Press
- 1996–2000 Springer Lecture Notes in Mathematics, vol. 1745
- 2001–2002 Springer Lecture Notes in Mathematics, vol. 1807
- 2002–2003 Springer Lecture Notes in Mathematics, vol. 1850
- 2004–2005 Springer Lecture Notes in Mathematics, vol. 1910
- 2006–2010 Springer Lecture Notes in Mathematics, vol. 2050

The first six were edited by Lindenstrauss and Milman, the seventh by Ball and Milman, the subsequent four by Milman and Schechtman, and the last one by Klartag, Mendelson and Milman.

As in the previous Seminar Notes, the current volume reflects general trends in the study of Geometric Aspects of Functional Analysis. Most of the papers deal with different aspects of Asymptotic Geometric Analysis, understood in a broad sense; many continue the study of geometric and volumetric properties of convex bodies and log-concave measures in high-dimensions, and in particular the mean-norm, mean-width, metric entropy, spectral-gap, thin-shell and slicing parameters, with applications to Dvoretzky and Central-Limit-type results. The study of spectral properties of various systems, matrices, operators and potentials is another central theme in this volume. As expected, probabilistic tools play a significant role, and probabilistic questions regarding Gaussian noise stability, the Gaussian Free Field

and First Passage Percolation are also addressed. The connection to the field of Classical Convexity is also well represented with new properties and applications of mixed-volumes. The interplay between the real convex and complex pluri-subharmonic settings continues to manifest itself in several additional articles. All contributions are original research papers and were subject to the usual refereeing standards.

We are grateful to Vitali Milman for his help and guidance in preparing and editing this volume.

Tel Aviv, Israel
Haifa, Israel

Bo'az Klartag
Emanuel Milman

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