FOREWORD

Special section on verified numerical computations, Part I

Verified numerical computations are solving scientific and engineering problems with complete rigor. They already play an important role in various fields. Following the previous special sections concerning verified numerical computations published in Vol. 2, No. 1 (2011), Vol. 4, No. 1 (2013), Vol. 5, No. 1 (2014), Vol. 6, No. 3 (2015), and Vol. 7, No. 3 (2016), this special section is devoted to self-validating methods and computer-assisted proofs. They have attracted attention of researchers in a wide spectrum of science and engineering.

Part I of this special section consists of three invited papers. The first paper by Katsuhisa Ozaki and Takeshi Ogita introduces the basics of verified numerical computations including floating-point arithmetic, interval arithmetic, and error-free transformations. The second paper by Kensuke Aishima surveys recent developments of numerical algorithms for inverse symmetric eigenvalue problems and their convergence theorems. The third paper by Marko Lange gives an overview of verification methods for finite dimensional conic linear programming problems. The guest editors believe that this special section invites many readers to the frontier of this emerging research field.

The guest editors would like to express their sincere thanks to all authors for their contributions. They also thank the guest associate editors, the reviewers, the secretary of this special section, and all the editorial staff of the NOLTA journal for their support on publishing this special section.

Shin'ichi Oishi, Siegfried M. Rump
Guest Editors

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