

This issue contains a selection of ten papers of the 15th International Workshop on Optimization and Inverse Problems in Electromagnetism (OIPE 2018).

The origin of OIPE dates back to the year 1989 in Pavia, Italy. Since then, 14 biennial meetings have been held across Europe, demonstrating the strategic importance of optimization and inverse problems in electromagnetic research. OIPE has established itself as an interdisciplinary forum, where experts from the fields of engineering, mathematics, physics and computer science with academic and industrial backgrounds discuss theoretical aspects, innovative algorithms, software methodologies and latest applications in a broad range of engineering fields.

The 15th edition of this biennial meeting, OIPE 2018, was held at UMIT – Private University for Health Sciences, Medical Informatics and Technology in Hall in Tirol, Austria, from September 11th to 13th. The Workshop was organized by the Institute of Electrical and Biomedical Engineering in cooperation with the Department of Mechatronics and the Department of Mathematics, both of the University of Innsbruck.

One focus of this edition of OIPE was theoretical aspects and fundamentals including the formulation of inverse problems and design problems, model order reduction, sensitivity analysis and regularization techniques. Emphasis was also put on novel optimization algorithms. Furthermore, applications in the fields of transportation, non-destructive evaluation, smart grids, electrical machines and biomedical engineering were presented. Finally, a special session within the program was devoted to the emerging field of computational electromagnetism.

For OIPE 2018, more than 100 digests from Europe, America, Asia and Africa were submitted. Of those, about 80 contributions were selected to be presented within eight oral sessions and three poster sessions. Special attention was paid to contributions of young researchers, with the two best contributions receiving the *IET SMT award for best paper presented by a young researcher*. Out of the full paper manuscripts submitted after the conference, ten papers were accepted after a thorough review process for this special issue of *COMPEL: The International Journal for Computation and Mathematics in Electrical and Electronic Engineering*. This collection nicely reflects the broad range of topics discussed during the Workshop.

I wish to express my gratitude to the OIPE International Steering Committee (ISC) and the Technical Committee for its support during the organization. I would like to give special thanks to the Editorial Board and to all session chairs and invited speakers for their valuable efforts. I am particularly grateful to Professor Jan Sykulski, Editor-in-Chief of *COMPEL: The International Journal for Computation and Mathematics in Electrical and Electronic Engineering*, for his kind support during the whole preparation process of this special issue. The support from IET and the Hall-Wattens Tourist Board is highly appreciated. Finally, I would like to thank the local organizing committee for their tremendous effort before, during and after OIPE 2018.

Looking forward meeting you at OIPE 2020 in Szczecin, Poland.

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