Special Issue

Robust Parameter Estimation with Sensor Arrays in Complex Electromagnetic Environments

Message from the Guest Editors

Sensor arrays have been widely applied in various fields, e.g., wireless communication, radar, sonar, and navigation. The key roles of sensor arrays include providing spatial parameter estimations, for example, for predicting the direction-of-arrival and source position, and for enhancing parameter estimation performances in other domains. However, with the present complex electromagnetic environment, general estimation methods have great performance degradations when encountering complex signal propagation, such as multipath or occlusion situations. Meanwhile, a sensor array system itself also suffers from uncertainties, such as gain-phase errors, position errors, and mutual coupling, which are classical but long-term problems. So, there are urgent requirements for robust estimation methods, including model-driven and data-driven methods, which can obtain high-precision, high-resolution, and large-capacity parameter estimation, regardless of complex influencing factors. This Special Issue invites contributions on the latest developments and advances of robust processing methods, schemes, or architectures on sensor array systems.

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Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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