



remote sensing



Special Issue Reprint

Multi-Sensor Systems and Data Fusion in Remote Sensing

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Remote sensing is developing rapidly due to progress in many interconnected fields. It includes the emergence of new sensors, development of sophisticated platforms for those sensors, and advances in signal and data processing. The progress in the fields of radar, optoelectronic, acoustic, magnetic, chemical, and other sensors is stunning. Whereas the mentioned sensors are currently more sensitive and accurate, have improved resolutions, data rates, and dynamical ranges, they still have their limitations. The utilization of multi-sensor systems and joint processing of their signals or data has long been considered an effective solution for reducing the disadvantages and best utilizing their strengths. The emergence of new types of sensors creates an opportunity for scientists and engineers to develop new and more capable integrated multi-sensor systems. It is necessary to mention that the users' expectations with respect to the size of the observed area or volume, data resolution, accuracy, speed of operation, and functionality of remote sensing systems are still increasing. Extended frequency bands, improved resolutions, and data rates of the new sensors as well as the common use of distributed sensors increase the influx of data in contemporary multi-sensor systems. These facts pose new challenges for the data fusion algorithms that must often employ the newest achievements from the areas of big data mining, statistical estimation, artificial intelligence, etc. This reprint provides a fresh insight into the newest developments in the fields of multi-sensor systems and data fusion.



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