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Design of Orthogonal Waveform and Synthetic Aperture Radar Imaging Application of Miniature mmW LFMCW MIMO Radar

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Deadline for manuscript submissions:
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Message from the Guest Editors

Dear Colleagues,

Recent advances in frequency-modulated continuous-wave (FMCW) radar based on complementary metal oxide semiconductors make it possible to design low-cost and low-power millimeter-wave (mmW) sensors. The application of the miniaturized, lightweight, and inexpensive mmW radar sensor is gradually expanding, mainly including target detection and tracking, object recognition and classification, the performance of vital signs, the combination of mmW radar and communication, the small synthetic aperture radar (SAR), and the holographic 3-D imaging. Due to the similarity of wireless communication and radar systems, MIMO radar uses multiple antennas to transmit orthogonal waveforms and multiple antennas to receive at the same time. After flexible signal processing, the performance of radar imaging, target detection, and parameter estimation can be significantly improved.

The main topics of this review and original research papers focus on the implementation basis and various applications of mmW MIMO radar, including but not limited to orthogonal waveform design, target detection and recognition, high-resolution SAR imaging, and moving target indication.

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Message from the Editor-in-Chief

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