Compact Polarimetric SAR

Message from the Guest Editors

Fully polarimetric (FP) SAR imagery is acknowledged as providing the highest performance in SAR applications, due to the complete radar target information content. However, FP SAR imagery has reduced swath width relative to single and dual polarized SAR imagery and has higher system requirements.

A SAR system with a compact polarimetric (CP) SAR architecture constitutes a significant new advancement in the field of Earth observation using radar remote sensing. A CP SAR architecture transmits circular polarization and receives two orthogonal, mutually-coherent linear polarizations. The recently proposed CP SAR configuration for Earth observation could be a compromised choice for SAR applications. The main advantage of such SAR systems is that they provide increased radar target information in comparison to standard single and dual polarized SAR systems, while covering much greater swath widths compared to FP SAR systems.

This Special Issue of Remote Sensing is dedicated to demonstrate the potential of CP SAR for Earth observation applications. Articles in all SAR applications using real or simulated CP SAR data are welcome.