Special Issue

Advances in Sparse Sensor Arrays

Message from the Guest Editor

Sparse array signal processing provides a systematical framework for sparse sampling and array structure with enlarged aperture, enhanced spatial resolution, increased degrees of freedom (DOFs) and reduced mutual coupling. Difference-co-array-based approaches, e.g., spatial smoothing technique based algorithms, Toeplitz-property-based algorithms and sparse reconstruction methods, can circumvent spatial aliasing and offer unique a response to targets with sparse sampling in time, space and frequency. Temporal and spatial sparse samplings encounter merits in direction of arrival (DOA) estimation and adaptive beamforming. Potential topics include but are not limited to the following:

- Generalizations of co-prime and nested arrays for increased DOFs
- Array geometry optimization for high-accuracy DOA estimation
- Sparse array calibration and mutual coupling effect
- Convex and nonconvex optimizations related to array signal processing
- Off-grid and grid-less solutions to super-resolution
- Sparse-recovery-based methods for DOA estimation

Guest Editor

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