

Synthesis of Sparse Complex Arrays by BCS

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Abstract

The design of sparse arrays can be carried out with several techniques, including optimization approaches (GA, SA, PSO) and matrix-pencil techniques. Recently, the exploitation of Bayesian Compressive Sampling has been proposed as a powerful tool to design sparse arrays with arbitrary patterns. Such an approach essentially exploits the capability of BCS to reliably reconstruct arbitrary functions with a sub-Nyquist sampling. However, such a technique has been applied only to symmetric and real linear arrays, which represent only a specific case to be taken into account in practical scenarios. As a consequence, the objective of the activity will be that of analyzing the performances of the above methodology when dealing with linear complex and asymmetric patterns.

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