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Grid-less T.V minimization for DOA estimation*

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Abstract

We present a grid-less version of the L1-SVD algorithm for direction of arrival estimation. The resulting semidefinite programming approach is a globally convergent, fully parametric method capable of working with two dimensional arrays with any arbitrary sensor configurations. It is computationally efficient, and shows improved performance when compared with other popular alternatives. The analysis also allows us to formulate the SPICE algorithm in gridless manner.

Keywords: DOA estimation, sparse recovery, grid-less methods, total variation, arbitrary geometry, atomic norm.

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