

Author's Accepted Manuscript

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PII: S0165-1684(16)30248-1
DOI: <http://dx.doi.org/10.1016/j.sigpro.2016.09.018>
Reference: SIGPRO6273

To appear in: *Signal Processing*

Received date: 27 June 2016
Revised date: 8 September 2016
Accepted date: 27 September 2016

Cite this article as: Kaushik Mahata and Md Mashud Hyder, Grid-less T.V minimization for DOA estimation, *Signal Processing* <http://dx.doi.org/10.1016/j.sigpro.2016.09.018>

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Grid-less $T.V$ minimization for DOA estimation*

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October 4, 2016

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.

*Research is supported by the Australian research council under the grant number DP130103909

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