Condition numbers of Vandermonde matrices with nearly colliding nodes

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The multivariate Prony method is quite well understood for well-separated nodes on the *d*-dimensional torus, see e.g. [5]. Here we study the case of nearly colliding nodes and the condition number of associated Vandermonde matrices. The situation with nodes that are lying on a grid have been studied by several authors, e.g. [2, 3, 6]. Though, in order to apply this to Prony's method it is necessary to have estimates for condition numbers of Vandermonde matrices with "off-grid" nodes. Starting from the well-separated, one dimensional setting [1], I present our results for different cases when nodes are nearly colliding.

Joint work with: Stefan Kunis, Markus Wageringel.

References

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