# Exact Recovery of Dirac Measures from Wigner Moments

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### Abstract

In this talk, we show the possibility of recovering a sum of Dirac measures on the rotation group $SO(3)$ from its low degree moments with respect to *Wigner-D functions* only. Exact recovery from moments up to degree $N$ is possible, if the support set of the measure obeys a separation distance of $\frac{36}{N+1}$. In this case, the sought measure is the unique solution of a *total variation* minimization. The proof of the uniqueness of the solution is in the spirit of the work of Candés and Fernandez-Granda [1] and requires *localization estimates* for interpolation kernels and corresponding *derivatives* on the rotation group $SO(3)$ with *explicit* constants.

## References

[1] E.J. Candéz and C. Fernandez-Granda. Towards a Mathematical Theory of Super-resolution. *Comm. on Pure and Appl. Math.*, 67(6):906–956, 2014.