

Towards optimal sensor placement for inverse problems in spaces of measures

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In this talk, we study the identification of a linear combination of point sources from a finite number of measurements contaminated by random noise. It relies on two main ingredients, first, a convex but non-smooth Tikhonov point estimator over the space of Radon measures and, second, a suitable mean-squared error based on its Hellinger-Kantorovich distance to the ground truth. Assuming standard non-degenerate source conditions as well as applying careful linearization arguments, a computable upper bound on the latter is derived. On the one hand, this allows to derive asymptotic convergence results for the mean-squared error of the estimator in the small variance case.

On the other, it paves the way for applying optimal sensor placement approaches to sparse inverse problems.

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