Department of Statistics STATISTICS COLLOQUIUM

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A Well-Tempered Landscape for Non-convex Robust Subspace Recovery

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ABSTRACT

We present a mathematical analysis of a gradient descent method for Robust Subspace Recovery. The optimization is cast as a minimization over the Grassmannian manifold, and gradient steps are taken along geodesics. We show that under a generic condition, the energy landscape is nice enough for the non-convex gradient method to exactly recover an underlying subspace. The condition is shown to hold with high probability for a certain model of data. This work is joint with Tyler Maunu and Teng Zhang. Other recent mathematical results related to robust subspace recovery are also discussed.

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