

Subspace-regularized Tensorial Parameter Estimation

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Abstract: Statistical analysis of tensor data has many modern applications such as genetics, signal processing, neuroimaging, and recommender systems, and are also drawing increasing attention in high-dimensional statistics. In this talk, we propose a new framework for subspace regularized estimation of tensorial parameters in high dimensions. The proposed one-step refined estimator extends the recent algorithmic and theoretical developments in envelope methodology from vectors to tensors, and is applicable to various tensor regression and tensor discriminant analysis models.