

1151-62-111

Yang Ning* (yn265@cornell.edu), Comstock Hall 1188, Ithaca, NY 14850. *Adaptive Estimation in Structured Factor Models with Application to Overlapping Clustering.*

This work introduces a novel estimation method, called LOVE, of the entries and structure of a loading matrix A in a sparse latent factor model $X = AZ + E$, for an observable random vector X in \mathbb{R}^p , with correlated unobservable factors Z in \mathbb{R}^K , with K unknown, and independent noise E . Each row of A is scaled and sparse. In order to identify the loading matrix A , we require the existence of pure variables, which are components of X that are associated, via A , with one and only one latent factor. Despite the fact that the number of factors K , the number of the pure variables, and their location are all unknown, we only require a mild condition on the covariance matrix of Z , and a minimum of only two pure variables per latent factor to show that A is uniquely defined, up to signed permutations. (Received August 13, 2019)