

The limits of the distant sample spikes for a high-dimensional generalized Fisher matrix and its applications

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Abstract: A generalized spiked Fisher matrix is considered in this paper, which is assumed to have a general form with the spiked eigenvalues scattered into a few bulks. By removing the diagonal or diagonal block-wise assumption in the previous works, we provide the limits of the distant sample spikes for a generalized Fisher matrix. To make it more applicable, we also give the estimates of the limits of the distant sample spikes, as well as the ones of the population spikes. As shown in the simulations, the proposed estimators are suitable for a wider range and more feasible in practice.