MICHIGAN STATE UNIVERSITY  
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COLLOQUIUM

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Estimation of functionals of high-dimensional mean and covariance matrix

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10:20 AM - 11:10 AM  
Refreshments 10:00 AM  
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Abstract

We consider estimating a functional involving both mean vector and covariance matrix. The functional carries important information across a sequel of multivariate statistics problems. We study the minimax estimation of the functional in the high-dimensional setting. Akin to past works on functional estimation, we reveal that the minimax rate of the functional undergoes a phase transition between regular parametric rate and some form of high-dimensional rate. In addition, we show that the optimal rate is attained by a carefully designed plug-in estimator based on de-biasing. On the contrary, a family of naive plug-in estimators are proved to fall short.