Testing for Homogeneity of Mean Vectors and Covariance Matrices in High-dimension

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Abstract: This paper aims to develop new tests for homogenity of mean vectors and covariance matrices in high-dimension. Two categorically weighted measures on the difference of means and covariances are proposed respectively. The asymptotic distributions of the two statistics are explored. We further give simple algorithms to facilitate applications. Finite sample performance of the two tests are shown through simulations.