Title:
Moments of Minors of Wishart Matrices

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bf Abstract:

For a random matrix following a Wishart distribution, we derive formulas for the expectation and the covariance matrix of compound matrices. The compound matrix of order m is populated by all $m \times m$-minors of the Wishart matrix. Our results permit to obtain first and second moments of the minors of the sample covariance matrix for multivariate normal observations. This work is motivated by the fact that such minors arise as constraints on the covariance matrix of distributions in classic models from multivariate statistics, including factor analysis.