On Riesz and Wishart Distributions Associated with Decomposable Undirected Graphs
(joint work with Steen A. Andersson, Indiana University, USA)

Thomas Klein
Department of Mathematics,
Technical University of Munich, Germany

Abstract
Classical Wishart distributions on the open convex cone of positive definite matrices and their fundamental features are extended to generalized Riesz and Wishart distributions associated with decomposable undirected graphs using the basic theory of exponential families. The families of these distributions are parameterized by their expectations/natural parameter and multivariate shape parameter and have a non-trivial overlap with the generalized Wishart distributions defined in Andersson and Wojnar (2004). We present the construction of these families, some of their appealing features, and present examples of how such distributions may arise in applications.

References: