

Kendall's Tau in High-Dimension Parsimony^{*†}

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Abstract. High-dimensional data models, often, in low sample size setups, abound in many interdisciplinary works, genomics and large biological systems being most noteworthy. Assumption of multinormality or linearity of regression may not be very plausible for such models. Moreover, restraints of various types may complicate statistical models. As such parametric approaches may not be very effective in such setups. Beyond parametrics, albeit, having increased scope and robustness properties, may generally be baffled with inadequately low sample size in order to have a reasonable margin of errors. Kendall's tau statistic is explored in this context with due emphasis on dimensional rather than sample size asymptotics. Applications of these findings in microarray data models are illustrated. The Chen-Stein theorem has been thoroughly exploited in this study.

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