Finite sampling inequalities: an application to two-sample Kolmogorov-Smirnov statistics

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Abstract: We review a finite-sampling exponential bound due to Serfling and discuss related exponential bounds for the hypergeometric distribution. We then discuss how such bounds motivate some new results for two-sample empirical processes. Our development complements results by Wei and Dudley (2011) concerning exponential bounds for two-sided Kolmogorov - Smirnov statistics by giving corresponding results for one-sided statistics with emphasis on "adjusted" inequalities of the type proved originally by Dvoretzky, Kiefer, and Wolfowitz (1956) and by Massart (1990) for one-sample versions of these statistics.

This talk is based on joint work with Evan Greene.