ACMS Statistics Seminar

Peter McCullagh
University of Chicago
Tuesday, November 27
154 Hurley Hall
3:30– 4:30 PM

Statistical Sparsity

The first goal of this work is to offer a definition of sparsity that is faithful to current usage in the statistical literature. The second goal is to develop an asymptotic approximation for the conditional distribution of the signal X given the observation $Y=X+\varepsilon$ for a sample of size one in an additive Gaussian model with known variance. Sparseness of the signal distribution is defined by the limiting exceedance rate for fixed thresholds, and distributional approximations are asymptotic in the sparsity rate $\rho \to 0$. The exceedance measure and its zeta transformation play a crucial inferential role: asymptotically, every posterior integral within a certain class depends only on the zeta function.

Based on arXiv:1712.03889 (Joint with N. Polson) Biometrika (to appear).