

On Asymptotically Optimal Confidence Regions and Tests for High-Dimensional Models

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We propose a general method for constructing confidence intervals and statistical tests for single or low-dimensional components of a large parameter vector in a high-dimensional model. It can be easily adjusted for multiplicity taking dependence among tests into account. We analyze its asymptotic properties and establish its asymptotic optimality in terms of semiparametric efficiency.

Joint work with Sara van de Geer and Peter Bühlmann