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*Model Selection and Inference*

**Abstract:** Model selection has an important impact on subsequent inference. Ignoring the model selection step leads to invalid inference. We investigate distributional properties of post-model-selection estimators and debunk some myths about model selection, in particular the myth that consistent model selection has no effect on subsequent inference asymptotically. We also discuss an 'impossibility' result regarding the estimation of the finite-sample distribution of post-model-selection estimators.