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Variable Selection in the Potential Outcomes Framework

A recent topic of much interest in causal inference is model selection. In this talk, we describe a framework in which to consider penalized regression approaches to variable selection for causal effects. Analogies and links with the literature on machine learning methods, missing data and imputation are drawn. A difference LASSO algorithm is defined, along with its multiple imputation analogues. The procedures are illustrated using a well-known right heart catheterization dataset.