

STATISTICS COLLOQUIUM

WEDNESDAY, FEBRUARY 6, 2008

TALK: 4:00 PM — SCIENCE CENTER RM. 705

RECEPTION: 5:15 PM — SCIENCE CENTER, 7TH FLOOR

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Higher Order Influence Functions for Causal and Missing Data Models

ABSTRACT

We describe a novel approach for making nonparametric valid inferences on nonlinear functionals on high dimensional models. Our class of estimators are U-statistics that equally apply to the regular case where the functional of interest is root-n estimable, and to the nonregular case where much slower nonparametric rates prevail. We illustrate our approach in two important examples: the construction of an honest confidence interval for a treatment effect in the presence of many confounders and/or under very low smoothness conditions and the seemingly unrelated problem of optimal model selection for nonparametric regression with outcome missing at random given a large vector of observed auxiliary covariates.