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SPEAKER TITLES/ABSTRACTS

Guillaume Basse
Stanford University

"Estimating Displacement Effects in a Hot Spot Policing Intervention in Medellin, Colombia"

In hot spot policing, resources are targeted at specific locations predicted to be at high risk of crime; so-called ``hot spots.'' Rather than reduce overall crime, however, there is a concern that these interventions simply displace crime from the targeted locations to nearby non-hot spots. We address this question in the context of a large-scale randomized experiment in Medellin, Colombia, in which police were randomly assigned to increase patrols at a subset of possible hotspots. Estimating the displacement effects on control locations is difficult because the probability that a nearby hot spot is treated is a complex function of the underlying geography. While existing methods developed for this ``general interference'' setting, especially Horvitz-Thompson (HT) estimators, have attractive theoretical properties, they can perform poorly in practice, due in part to extreme weights. We make several contributions in this paper. First, we characterize the performance of HT estimators under different interference settings and compare that to modified estimators, like the H{\`a}jek estimator, that trade off small amounts of bias for large reductions in variance. Second, we suggest a simulation-based approach that uses the structure of the application of interest --- in our case, the Medellin street network --- for assessing the trade-offs of different randomization-based estimators. Finally, we explore some implications for experimental design in this setting. We use these insights to re-analyze displacement effects in the hot spot policing experiment.