Departmental Seminar on April 22, 2024

Patrik Guggenberger (Host: Christian Conrad)

Title:

"**New results on minimax regret treatment rules in finite samples**"

The talk is based on several papers, e.g. the paper

A note on minimax regret rules with multiple treatments in finite samples*

Abstract:

We study minimax regret treatment rules infinite samples under *matched treatment assignment* in a setup where a policymaker, informed by a sample, needs to decide between T different treatments for a $T \geq 2$. Randomized rules are allowed for. We show that the generalization of the minimax regret rule derived in Stoye (2009) for the case T = 2 is minimax regret for general finite $T > 2$. We also show by example, that in the case of *random assignment* the generalization of the minimax rule in Stoye (2009) to the case $T > 2$ is not necessarily minimax regret and derive minimax regret rules for a few small sample cases, e.g. for $N = 2$ when $T = 3$.
In the case where a covariate x is included, it is shown that a minimax regret rule is obtained by using minimax regret rules in the "conditional-on-x" problem if the latter are obtained as Nash equilibria.

* (joint work with Haoning Chen)