

Econometrics Seminar
April 23, 2024

Speaker: Alfonso Landeros (UCR, Department of Statistics)

Title: The Proximal Distance Principle for Constrained Estimation

Abstract of the seminar: Statistical methods often involve solving an optimization problem, such as in maximum likelihood estimation and regression. The addition of constraints, either to enforce a hard requirement in estimation or to regularize solutions, complicates matters. Fortunately, the rich theory of convex optimization provides ample tools for devising novel methods. In this talk, I present applications of distance-to-set penalties to statistical learning problems. Specifically, I will focus on proximal distance algorithms, based on the MM principle, tailored to various applications such as regression and discriminant analysis. Special emphasis is given to sparsity set constraints as a compromise between exhaustive combinatorial searches and lasso penalization methods that induce shrinkage.

Relevant papers:

<https://www.jmlr.org/papers/v23/20-964.html>

<https://www.pnas.org/doi/full/10.1073/pnas.2303168120>