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Title: Hilbert-Scale Regularization for Functional Estimation under Conditional Moment Conditions

Joint work with Jean-Pierre Florens and Xiaohong Chen

Abstract: In recent econometrics works on inverse problems, Hilbert-Scale appeared to be a well suited tool for regularization. In particular, it gives a clear understanding of the rates of convergence of nonparametric estimators and, therefore, on the quality of the estimator. In this talk, Hilbert-Scale Regularization is considered for functional estimation under moment conditions. In a first part, we consider general moment conditions, and in a second part we address the problem of conditional moment conditions. A major issue in this problem is the stable inversion of a non-linear operator. A particular focus during the talk will be to define the optimality of the instruments and to compare various estimators given, for instance, by preconditionning techniques.