



ARC/CORE SEMINAR

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*"A Nonparametric Copula based Test for Conditional Independence
with Applications to Granger Causality"*

Wednesday, May 13, 2009

14:30

Room : b 135 (core)

Abstract

This paper proposes a new nonparametric test for conditional independence which is based on the comparison of Bernstein copula densities using the Hellinger distance. The test is easy to implement because it does not involve a weighting function in the test statistic, and it can be applied in general settings since there is no restriction on the dimension of the data. In fact, to apply the test, only a bandwidth is needed for the nonparametric copula. We prove that the test statistic is asymptotically pivotal under the null hypothesis, establish local power properties, and motivate the validity of the bootstrap technique that we use in finite sample settings. A simulation study illustrates the good size and power properties of the test. We illustrate the empirical relevance of our test by focusing on Granger non-causality using financial time series data to test for nonlinear leverage versus volatility feedback effects and to test for causality between macroeconomic variables.

You are welcome to the coffee break after the seminar (room : c 105)

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