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Juan Carlos PARDO-FERNÁNDEZ

Universidade de Vigo, Pontevedra, Spain

ASYMPTOTIC DISTRIBUTION-FREE TESTS FOR SEMIPARAMETRIC REGRESSION MODELS

In this seminar, we will present a new general methodology for constructing nonparametric and semiparametric Asymptotically Distribution-Free (ADF) tests for semiparametric hypotheses in regression models. Classical tests based on the difference between the estimated distributions of the restricted and unrestricted regression errors are not ADF. Here, we introduce a novel transformation of this difference that leads to ADF tests with well-known critical values. The general methodology is illustrated with applications to testing for parametric models against nonparametric or semiparametric alternatives, and semiparametric constrained mean-variance models. Several Monte Carlo studies show that the finite sample performance of the proposed tests is satisfactory in moderate sample sizes.

This is joint work with Juan Carlos ESCANCIANO (Indiana University, USA) and Ingrid Van KEILEGOM (KU Leuven, Belgium).

Short bio:

Bachelor in Mathematics (specialist in Statistics and Operational Research) and PhD (doctor Europaeus) by the University of Santiago de Compostela. Associate Professor at the Department of Statistics and OR of the University of Vigo. He has made long-term stays at the Université catholique de Louvain (Belgium), Université Paul Sabatier de Toulouse (France) and University of Buenos Aires (Argentina), and short visits to other universities in Spain and abroad to give seminars and courses. His research is concerned with nonparametric statistics and focuses in the development of new goodness-of-fit tests for regression models and new methodology for ROC curves.