AVVISO di SEMINARIO

Dipartimento di Matematica e Applicazioni "R. Caccioppoli"

Università degli Studi di Napoli Federico II

Il giorno **10 settembre 2025**, alle ore **12:00**, in aula F, del Dipartimento di Matematica e Applicazioni R. Caccioppoli, il **Prof. Nikolai Leonenko**, Cardiff School of Mathematics, Cardiff University, terrà il seguente seminario:

"Humbert generalized fractional differenced processes"

Abstract: We use the generating functions of the Humbert polynomials to define two types of Humbert generalized fractional differenced ARMA processes. We present stationarity and invertibility conditions for the introduced models. The singularities for the spectral densities of the introduced models are investigated. In particular, Pincherle ARMA, Horadam ARMA and Horadam–Pethe ARMA processes are studied. It is shown that the Pincherle ARMA process has seasonable long memory property. Additionally, we employ the Whittle quasi-likelihood technique to estimate the parameters of the introduced processes. Through this estimation method, we attain results regarding the consistency and normality of the parameter estimators. We also conduct a comprehensive simulation study to validate the performance of the estimation technique for Pincherle ARMA process. Moreover, we apply the Pincherle ARMA process to real-world data, specifically to Spain's 10 years treasury bond yield data, to demonstrate its practical utility in capturing and forecasting market dynamics.

These are joint results with Niharika Bhootna, Monika Singh Dhull and Arun Kumar (Indian Institute of Technology Ropar, Rupnagar, Punjab, India)

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Luigia Caputo, Roberta Schiattarella