ISMMA

« INSTITUTUL DE STATISTICA MATEMATICA SI MATEMATICA APLICATA al ACADEMIEI ROMANE »

SOCIETATEA DE PROBABILITĂȚI
ȘI STATISTICĂ DIN ROMÂNIA

SEMINAR de « TEORIA PROBABILITATILOR, STATISTICA si APLICATII »

VINERI 11 IANUARIE 2019, ora 11:00

RADU STOICA (Université de Lorraine, France)

«Inhomogeneous Gibbs point processes for modelling galaxies distribution in our Universe »

Abstract: In my my previous talk in Bucharest (the 11th of January 2018) I was presenting a new algorithm, ABC Shadow, a versatile method for fitting point processes to data. This talk presents several Gibbs point interaction models (Geyer, Connected Components and Area-Interaction) that are fitted to real three dimensional datasets from the SDSS galaxy catalogue via this algorithm. Under the hypothesis of the considered models, the fitted point processes allow a morphological and statistical characterization of the galaxies distributions. Several model validation techniques are also used. They are based on Monte Carlo likelihood asymptotics, summary statistics (K-Ripleys function, pair correlation function...) and residual analysis for point processes (residuals plots, q-q plots...). Conclusions and perspectives, are finally depicted.

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