MICHIGAN STATE UNIVERSITY
Department of Statistics and Probability

COLLOQUIUM

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Continued fractions, the Chen-Stein method and extreme value theory

Tuesday, September 15, 2020
10:20 AM - 11:10 AM Eastern Time (ET)
Zoom

Abstract

In this work, we deal with extreme value theory in the context of continued fractions using techniques from probability theory, ergodic theory and real analysis. We give an upper bound for the rate of convergence for the Poissonian exceedances of digits obtained from the regular continued fraction expansion of a number chosen randomly from (0,1) according to the Gauss measure. As a consequence, we significantly improve the best known upper bound on the rate of convergence of the maxima bettering an error term used in the proof of a conjecture of Paul Erdös. We observe that the asymptotics of order statistics and the extremal point process can also be investigated using our methods, which can also be applied to other dynamical systems arising in number theory and hyperbolic geometry.

This talk is based on a joint work with ***Anish Ghosh*** (TIFR Mumbai) and ***Maxim Sølund Kirsebom*** (Univ of Hamburg)

Zoom details can be found at: https://stt.natsci.msu.edu/stt-colloquium-zoom-info/

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