

SEMINARIO

Modelamiento Estocástico y Núcleo Milenio Modelos Estocásticos de Sistemas Complejos y Desordenados

ESPOSITOR

Andreas Kyprianou
University of Bath

TITULO

Deep factorization of the stable process

Abstract:

The Lamperti–Kiu transformation for real-valued self-similar Markov processes (rssMp) states that, associated to each rssMp via a space-time transformation, is a Markov additive process (MAP). In the case that the rssMp is taken to be an α -stable process with $\alpha \in (0,2)$, the characteristics of the matrix exponent of the semi-group of the embedded MAP (the Lamperti-stable MAP) are computed. Specifically, the matrix exponent of the Lamperti-stable MAP's transition semi-group can be written in a compact form using only gamma functions. Just as with Levy processes, there exists a factorisation of the (matrix) exponents of MAPs, with each of the two factors uniquely characterising the ascending and descending ladder processes, which themselves are again MAPs. To our knowledge, not a single example of such a factorisation currently exists in the literature. In this talk we provide a completely explicit Wiener–Hopf factorisation for the Lamperti-stable MAP. As a consequence of our methodology, we also get additional new results concerning space-time invariance properties of stable processes.

Viernes 13 de marzo a las 17:30 hrs, Sala de Seminarios John Von Nuemann-CMM, Séptimo Piso, Beaucheff 851, Torre Norte.