

### **Limit theorems for the realised covariation of a bivariate Brownian semistationary process**

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**Date:** 16 Jan 2018 (Tuesday)  
**Time:** 11.00am – 12.00pm  
**Venue:** MAS Executive Classroom 1 #03-06,  
School of Physical and Mathematical Sciences

### **Abstract**

Within the realm of stochastic processes that fail to be a semimartingale, the recent literature has devoted particular attention to the Brownian semistationary process, a process that has originally been used in the context of turbulence modelling, but has subsequently been employed as a price process in energy markets.

This talk presents a weak law of large numbers and a central limit theorem for the scaled realised covariation of a bivariate Brownian semistationary process. The novelty of the results lies in the fact that we derive the suitable asymptotic theory both in a multivariate setting and outside the classical semimartingale framework. The proofs rely heavily on recent developments in Malliavin calculus.

This talk is based on joint work with Dr. Almut Veraart, reader in Statistics at Imperial College London.

### **Speaker Biography**

Dr Andrea Granelli obtained his Ph.D. in mathematics at Imperial College London in 2017 and his M.Sc. in Financial Mathematics at the London School of Economics and Political Science. His research interests include limit theorems for stochastic processes, Malliavin calculus, mathematical finance and option pricing.

He currently works as a quant at Deutsche Bank, City of London.

**Host: Dr Pun Chi Seng Patrick**  
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