Statistics and Actuarial Science Seminar

Title: Markets as networks evolving step by step: Relational event models for the interbank market

Speaker: Paola Zappa (Maynooth University)

Date: Thu 3rd October 2019 at 3:00PM

Location: Seminar Room SCN 1.25

Abstract: We introduce a modelling framework for continuous-time relational data that allows detecting the fine-grained dynamics of network formation and change in financial and other markets. We propose newly derived Relational Event Models with time-weighting functions and corresponding time-weighted statistics as a suitable approach to model coexistence and differentiated effect of short-term interactions and long-term relationships. By specifying appropriate statistics and fine tuning weighting-function parameters, we show how this framework allows (1) obtaining more accurate representations of a market structure, (2) disentangling competing micro-mechanisms of network formation and change, and (3) assessing their relevance. Also, by comparing alternative specifications of time effects, we emphasize the parsimony afforded by our approach. We illustrate the merits of our modelling framework in a study of the interbank liquidity market during the 2008 financial crisis.