

Title: Multivariate Max-stable Processes with Application to the Forecasting of Multiple Hazards
Speaker: Claudia Neves, University of Reading, UK

Abstract: This is a light-touch presentation around the work currently being developed to meet the aims of the EPSRC Innovation Fellowship awarded for the project *Multivariate Max-stable Processes with Application to the Forecasting of Multiple Hazards*. The broad aim of this grant is to champion innovation in the statistical modelling of the structural components that capture how extremes from multiple phenomena are likely to manifest themselves jointly across a certain region and over time. Real life applications abound in the multivariate infinite-dimensional max-stable processes frameworks: the Fukushima nuclear disaster in 2011 was ignited by the combination of a huge earthquake followed by a tsunami; the sting jet phenomenon often unleashes very extreme local wind speeds, heavy rainfall and extreme temperatures on a nuclear plant.

The research programme to this fellowship has predominant focus on risk assessment aspects and will be carried out in the context of ongoing collaborations with the Energy sector, in particular with EDF Energy. The statistical methodology to be developed as part of this EPSRC Innovation Fellowship will contribute to ensure safety standards and reliable operation of different stakeholders spanning the energy sector, which will ultimately give people access to more affordable energy, provide more interaction and safety and thus more choice.