Uncertainty Quantification, Risk and Decision-making Workshop

22nd–23rd May, 2012, LSE

The workshop aimed to bring together experts from various disciplines covering different aspects of uncertainty quantification. It focused on three topics: the characterisation of uncertainty, the design of experiments and the question of decision-making under uncertainty.

From Wikipedia, Uncertainty Quantification (UQ) is the science of quantitative characterization and reduction of uncertainties in applications. It tries to determine how likely certain outcomes are if some aspects of the system are not exactly known.

The first part of the workshop, with three talks by Nick Watkins, Jochen Bröcker and Jim Baker, tackled the question of characterising uncertainty, with a particular emphasis on climate applications. The question of uncertainty and measurement was illustrated by a study of the program of Reducing Emissions from Deforestation and Forest Degradation and the difficulties related to the measurement of forestry and carbon emission.

The second part of the workshop, with three talks by Henry Wynn, Ron Bates and Jordan Ko, focused on the question of experimental design and robustness. The question of uncertainty management in a complex engineering environment was extensively discussed in a Rolls Royce case study.

Finally, the last part of the workshop, with two talks by Massimo Marinacci and Bernard Sinclair-Desgagné, looked at the question of decision-making under uncertainty. In many decision-making situations, both at the individual and the public policy level, it may happen that different yet valid models portray the same phenomenon, the actual context. The question of how to cope with these varying representations and their possibly diverging implications was extensively discussed.

Both days were filled with interesting, sometimes intense, but always good-natured discussion. The diversity of expertise represented provided immediate and engaging cross-fertilization of ideas. Future (possibly annual) events are planned to keep this platform alive in the future.