



NSF-Duke-NCSU-UNC

Joint MUMS Program Transition - SPUQ Workshop

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SPEAKER/ABSTRACT

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"Sensitivity Analysis of Computer Models: A Statistical Perspective"

Abstract:

I will address what some have come to refer to as global sensitivity analysis, based on the expression a model's inputs as random. Current usage sometimes refers to uncertainty analysis as the characterization of the marginal distribution of outputs resulting from random inputs, while sensitivity analysis focuses on characterization of conditional distributions deemed to be indicators of the importance of individual inputs or groups of them (e.g. the Sobol' indices). A "statistical perspective" on this activity comes (I believe) from the premise that incomplete information results in uncertainty that is different from that associated with the input distribution, but that must be accounted for in a careful analysis. In this context, "incomplete information" may mean a sample of inputs used in place of an input distribution, and/or a surrogate/emulator used in place of the computer models of interest. The presentation will not be technically detailed, and the primary intent will be to explain one statistician's viewpoint to members of other disciplines within the mathematical sciences.