

Title: Derivative Based Global Sensitivity Measures: Past, Present and Future

Derivative-based global sensitivity measures (DGSM) is a technique used in global sensitivity analysis to identify the importance of different subsets of input variables to variation in model output. It has a strong link with the Morris screening method and Sobol' sensitivity indices and has several advantages over them. One of the key advantages of DGSM is its comparatively lower computational cost compared to estimating Sobol' sensitivity indices, making it a practical option for sensitivity analysis, especially in high-dimensional models. In this talk we present a history of development and a survey of recent advances in DGSM. In particular, we discuss a link between DGSM and the active subspace method, extension of DGSM for models with dependent inputs and Shapley values based on DGSM.