ID de Contribution: **23** Type: **Non spécifié**

Global sensitivity analysis with weighted Poincaré inequalities

mercredi 19 juin 2024 17:30 (3 heures)

Recently, one-dimensional Poincaré inequalities were used in Global Sensitivity Analysis (GSA) to provide upper bounds and chaos-type approximations of Sobol indices with derivative-based global sensitivity measures. As a new proposal, we develop the use of one-dimensional weighted Poincaré inequalities. The use of weights provides an additional degree of freedom that can be manipulated to enhance the precision of the upper bounds and approximations. In this context, we propose a way to construct weights that guarantee the existence of an orthonormal system of eigenfunctions, as well as a data-driven method based on a monotonic approximation of the main effects. Finally, we illustrate the benefits of using weights in a GSA study of a real flooding application.

Auteurs principaux: JOULIN, Aldéric (Institut de Mathématiques de Toulouse); HEREDIA, David (Institut de Mathématiques de Toulouse); ROUSTANT, Olivier (IMT)

Orateur: HEREDIA, David (Institut de Mathématiques de Toulouse)

Classification de Session: Session Poster

Classification de thématique: Session poster