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SALib: An open-source Python library for Sensitivity Analysis

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Software

- Review
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Summary

SALib contains Python implementations of commonly used global sensitivity analysis methods, including Sobol (Sobol' 2001, Andrea Saltelli (2002), Andrea Saltelli et al. (2010)), Morris (Morris 1991, Campolongo, Cariboni, and Saltelli (2007)), FAST (Cukier et al. 1973, A. Saltelli, Tarantola, and Chan (1999)), Delta Moment-Independent Measure (E. Borgonovo 2007, Plischke, Borgonovo, and Smith (2013)) Derivative-based Global Sensitivity Measure (DGSM) (Sobol' and Kucherenko 2009) , and Fractional Factorial Sensitivity Analysis (Andrea Saltelli et al. 2008) methods. SALib is useful in simulation, optimisation and systems modelling to calculate the influence of model inputs or exogenous factors on outputs of interest.

SALib exposes a range of global sensitivity analysis techniques to the scientist, researcher and modeller, making it very easy to easily implement the range of techniques into typical modelling workflows.

The library facilitates the generation of samples associated with a model's inputs, and then provides functions to analyse the outputs from a model and visualise those results.

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