



Statistical inference for Sobol pick freeze Monte Carlo method

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Many mathematical models involve input parameters, which are not precisely known. Global sensitivity analysis aims to identify the parameters whose uncertainty has the largest impact on the variability of a quantity of interest (output of the model). One of the statistical tools used to quantify the influence of each input variable on the output is the Sobol sensitivity index. We consider the statistical estimation of this index from a finite sample of model outputs. We study asymptotic and non-asymptotic properties of two estimators of Sobol indices. These properties are applied to significance tests and estimation by confidence intervals.

Subjects: **Applications (stat.AP)**; Statistics Theory (math.ST); Methodology (stat.ME)

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