USTM Resiliency Sensitivity Analysis

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Abstract

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Keywords: Sensitivity Analysis Resiliency Latin Hypercube Sampling

1. Questions

There exists uncertainty in travel demand models. This is known by transportation planners but the majority do not use any particular method to quantify it. This uncertainty exists mostly due to the variance among input parameters. A coefficient of variation can be used to approximate the standard deviation of the inputs, which then provides a range of values that are possible for model input. (Zhao and Kockelman, 2002)

The research questions are therefore:

- How many iterations of Latin Hypercube Sampling in a travel demand model are necessary to approximate random sampling methods (e.g., Monte Carlo simulation)?

2. Methods

Which describes the methods and data used in the article.

3. Findings

Which describes the results of what you found.

References

Zhao, Y. and Kockelman, K. M. (2002). The propagation of uncertainty through travel demand models: an exploratory analysis. *The Annals of regional science*, 36(1):145–163.

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