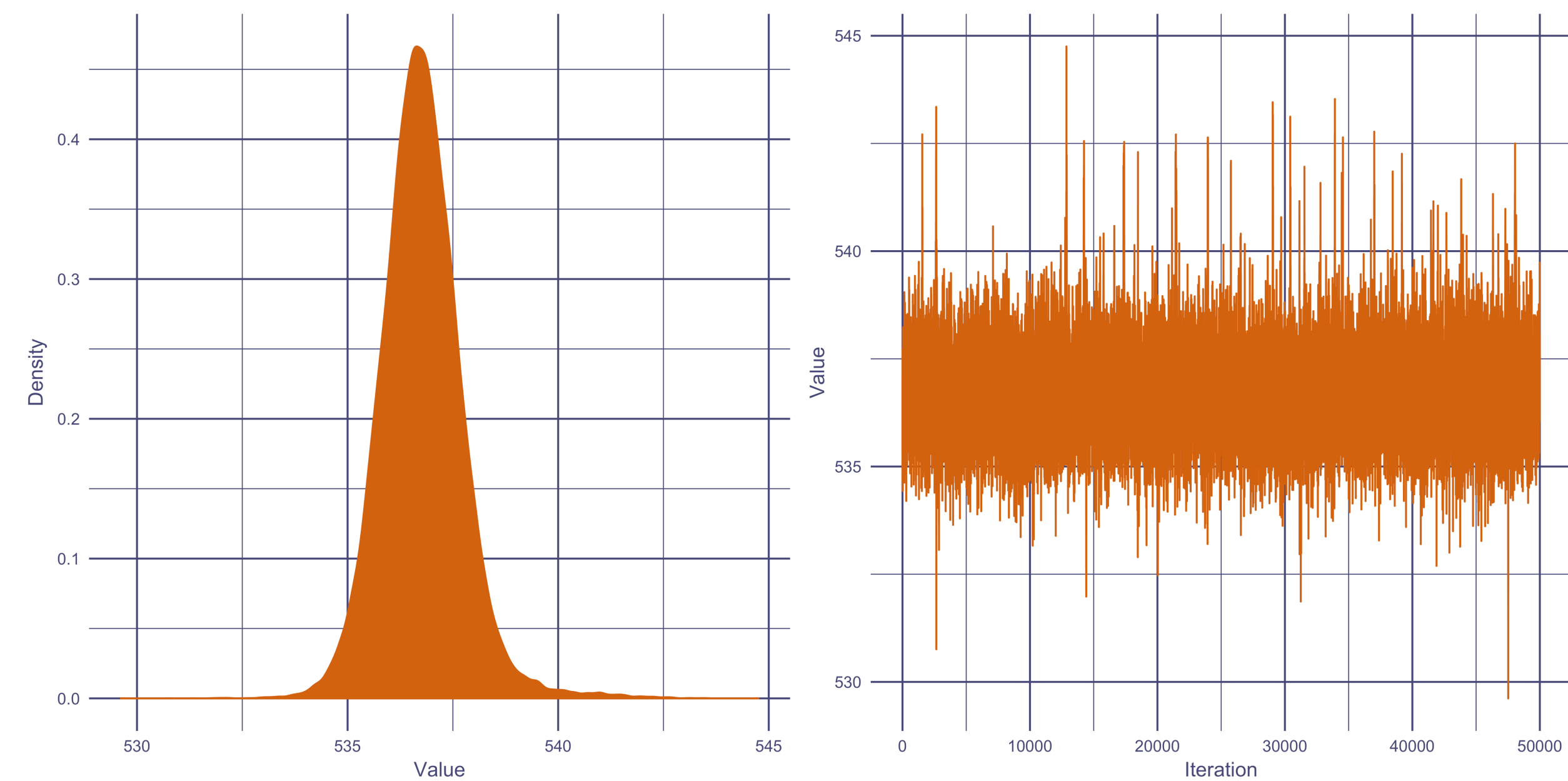


Now you see it? Now you don't? The role of graphics in identifying MCMC convergence

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Introduction

Data visualisations are commonly used in Bayesian statistics to determine whether a model has converged. Two common plots are traceplots and density plots.



However, there is **no empirical evidence** showing that people can use these plots to reliably detect convergence. We apply visual inference methods (Buja et al., 2009), and **ask you, the reader** to identify out of a lineup of graphics which one has converged by participating in a study.

During the 2-5 minutes study, you will be asked to rate your experience with Bayesian statistics, and select which visualisation or statistic represents one that has **converged**, and rate your confidence on this decision. **Data from this study will be made available online** so that members of the statistical community can verify and build upon our results. No identifying information (names, emails) about participants will be recorded.

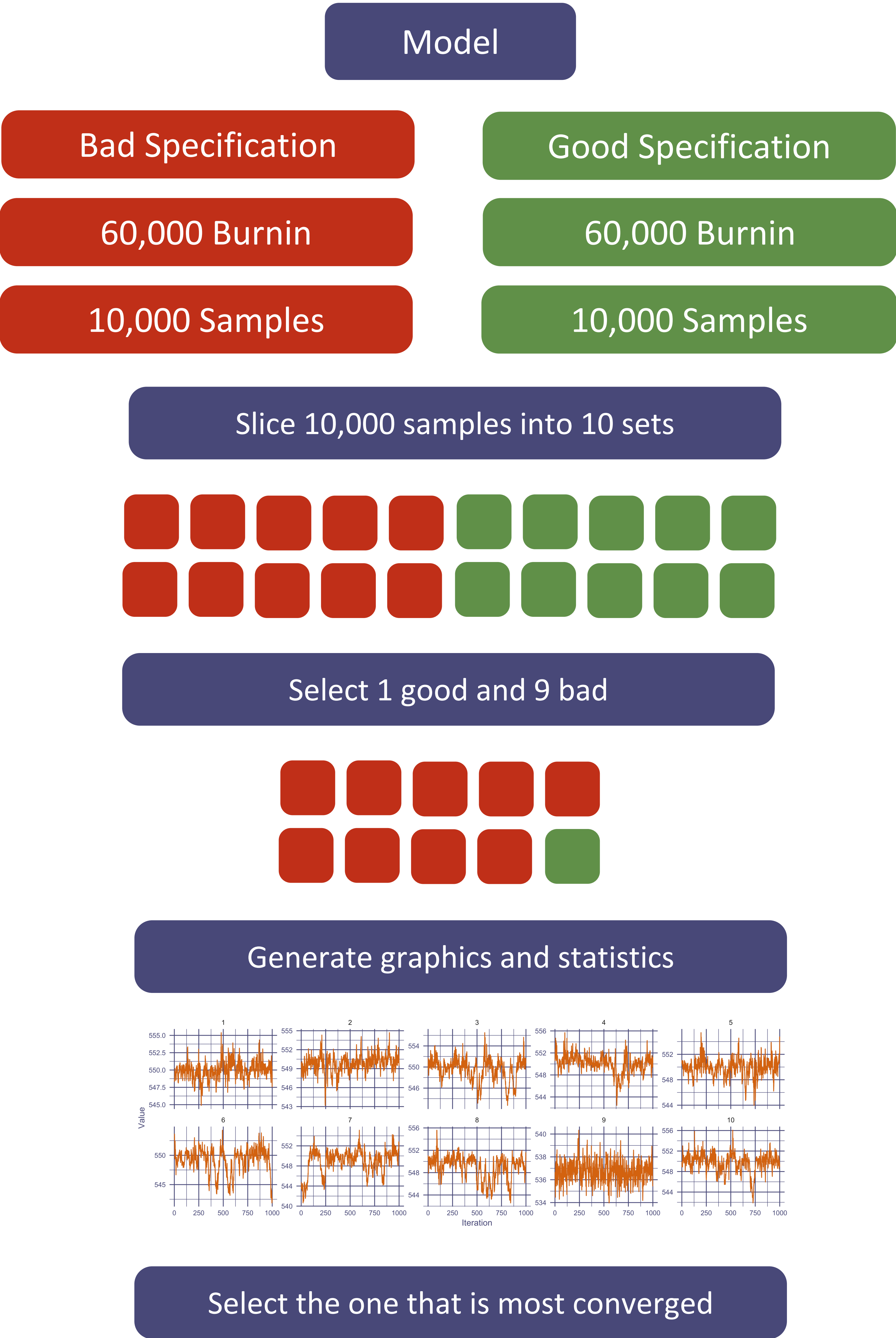
Research Questions

Can visualisations be used to detect convergence?

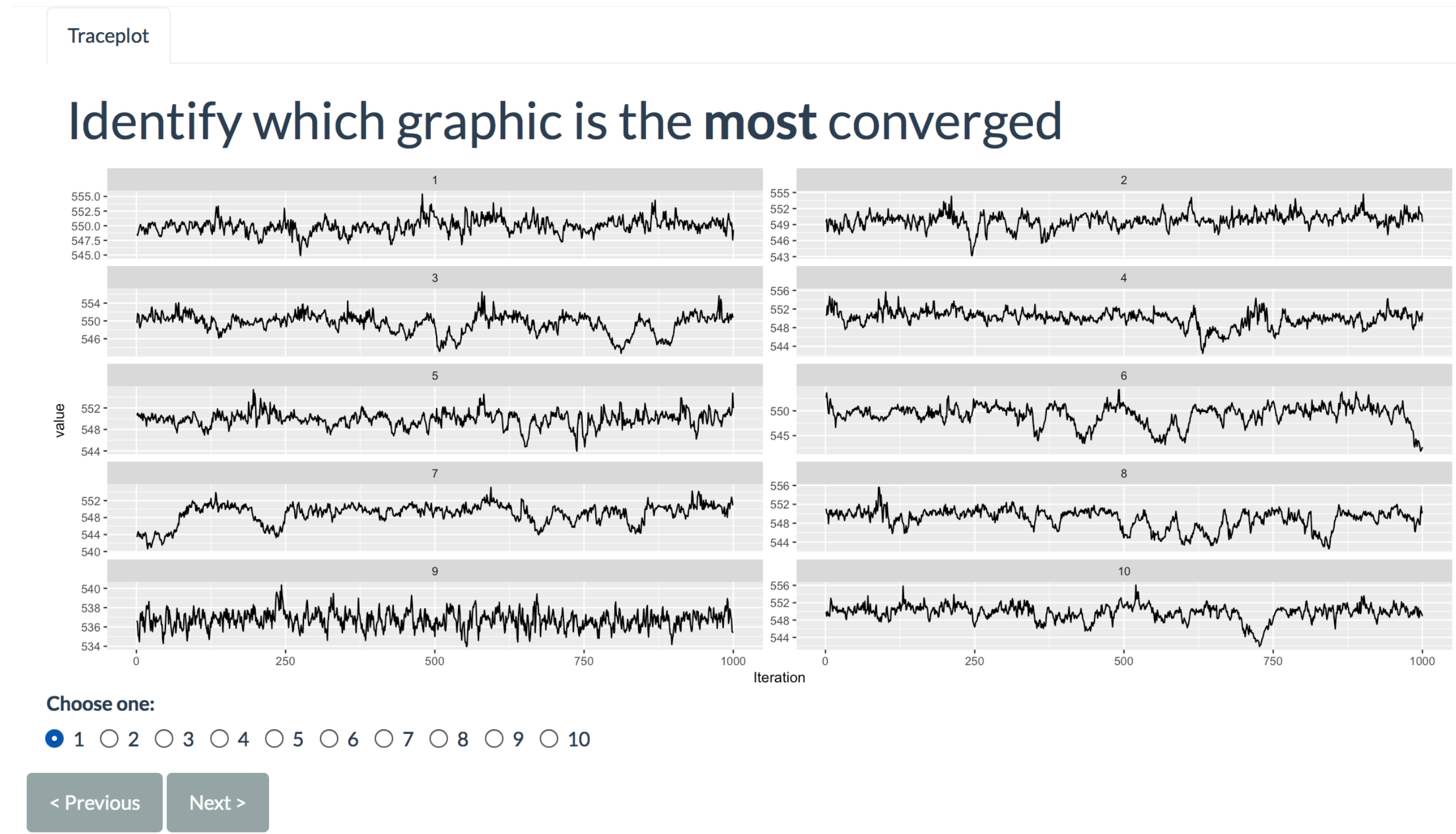
Are some visualisations better than others for detecting convergence?

Is experience with Bayesian statistics related to detecting convergence?

Method



Your Turn



Future Work

Using a variety of diagnostics to make a decision

Generating non convergent samples from a variety of models

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