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## Design and Inference in a RCT when Treatment Observations Follow a Two-Component Mixture Model

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A mixture of a distribution of responses from untreated patients and a shift of that distribution is a useful model for the responses from a group of treated patients. The mixture model accounts for the fact that not all the patients in the treated group will respond to the treatment and their responses follow the same distribution as the responses from untreated patients. The treatment effect in this context consists of both the fraction of the treated patients that are responders and the magnitude of the shift in the distribution for the responders. In this talk, we investigate the design and analysis of a RCT that uses a two-component mixture model for the observations in the treatment group.

### Keywords

Process Monitoring, Spatial Modeling, Mixture Models

### Classification

Both methodology and application

**Primary author:** JESKE, Daniel (University of California, Riverside)

**Co-authors:** Mr LUBICH, Bradley (University of California); Dr YAO, Weixin (University of California)

**Presenter:** JESKE, Daniel (University of California, Riverside)

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