Bayesain Project

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Introduction

This report summaries the Bayesian analysis of the Reisby Dataset. The Reisby Dataset is based on a 5 week (first placebo) psychiatric study which investigates response of depressed patients to IMI. The Bayesian analysis will investigate how the drug affects depression.

Data Setup and Cleaning

Data

The data is loaded from a .Rdata file containing the Riesby Dataset introduced in the introduction.

Data Exploration

Correlation

Graphical Summaries

Hamilton Scores

Sex

Reactive vs Endogenous

DMI and IMI Concentrations

Data Cleaning

Indicators

Weeks (Placebo)

Sex

Models

Linear Regression

Basic Multiple

Modelling and Diagnostics

Summaries

Term Interactions

Modelling and Diagnostics

Summaries

Not everyone was measured every week.

Hierarchical

Modelling and Diagnostics

Summaries

Auto Regression

AR(1)

Modelling and Diagnostics

Summaries

AR(2)

Modelling and Diagnostics

Summaries

Gaussain Process

Modelling and Diagnostics

Summaries

Conclusion

Appendix

Abbrevations

IMI - antidepressant drug imipramine

DMI - desmethylimipramlne (Processed IMI)

AR - Auto Regressive Models

AR(1) - Auto Regressive Models (1st Degree)

AR(2) - Auto Regressive Models (2nd Degree)

Code

```r
load("Reisby.RData")
```