A Bayesian Framework for Generalized Linear Mixed Models in Genome-Wide Association Studies

Xulong Wang, Gregory W. Carter

January 15, 2016

Methods

Overview of the statistical models

$$\beta_0 \sim N(\mu^{prior}, \sigma^{prior}) \tag{1}$$

$$\begin{aligned} \beta_0 &\sim N(\mu, \sigma) && (2)\\ \mu &= z * \sigma && (3)\\ z &\sim N(prior, 1) && (4)\\ \sigma &\sim N(0, 1) && (5) \end{aligned}$$

$$\begin{aligned} \beta_0 &\sim N(\mu, \sigma) && (6)\\ \mu &\sim N(\mu^{prior}, 1) && (7)\\ \sigma &\sim N(\sigma^{prior}, 1) && (8) \end{aligned}$$