Model:

$$Y_{mi} \overset{ind.}{\sim} \text{Weibull}(\eta_m, \beta_m)$$

$$\sigma_m = \frac{1}{\beta_m}, \quad t_{p,m} = \exp\{\log(\eta_m) + \sigma_m \Phi_{sev}(p)\}$$

$$\log(t_{p,m}) \overset{i.i.d}{\sim} \text{t}(\nu = 5, \mu_1, \tau_1^2)$$

$$\sigma_m \overset{i.i.d}{\sim} \text{log-normal}(\mu_2, \tau_2^2)$$

Priors:

$$p(\mu_1, \mu_2) \propto 1$$

$$\tau_1, \tau_2 \overset{ind.}{\sim} \text{half-Cauchy}(0, 10)$$