

$$y \sim \text{Poisson}(\lambda)$$

$$\lambda \sim \text{Gamma}(\alpha, \beta)$$

$$\alpha \sim \text{Gamma}(a, b)$$

$$\beta \sim \text{Gamma}(c, d)$$

$$p(\underline{y} | \lambda) = \frac{e^{-n\lambda} \lambda^{\sum y_i}}{\prod_{i=1}^n y_i!}$$

$$p(\lambda) \propto \lambda^{\alpha-1} e^{-\beta\lambda}$$

$$p(\alpha) \propto \alpha^{a-1} e^{-b\alpha}$$

$$p(\beta) \propto \beta^{c-1} e^{-d\beta}$$

Conjuncto posterior

$$p(\lambda, \alpha, \beta | \underline{y}) \propto p(\underline{y} | \lambda) \times p(\lambda | \alpha, \beta)$$
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$$\propto p(\alpha) p(\beta)$$

$$p(\alpha | \lambda, \beta, \underline{y})$$

$$p(\beta | \alpha, \lambda, \underline{y})$$

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