把分布写成
高斯乃与另一个更
简单分布的混
合体,方便计算.

- Scale mixture 高斯.

$$\int_0^\infty N(x \mid \mu, \frac{\delta^2}{r}) \, Ga(r \mid \frac{v}{2}, \frac{v}{2}) \, dr$$

$$= \int_0^\infty \frac{r^{-\frac{1}{2}}}{\sqrt{2\pi}\delta} \exp\left(-\frac{(x-\mu)^2}{2\delta^2} r\right) \frac{(\frac{v}{2})^{\frac{v}{2}}}{\Gamma(\frac{v}{2})} \cdot r^{\frac{v}{2}-1} \exp\left(-\frac{rv}{2}\right) dr.$$

- Laplace 分布

$$f(b) = \frac{1}{4\delta} \exp\left(-\left|\frac{b-\mu}{2\delta}\right|\right)$$

$$= \int \frac{1}{2\pi r} \exp\left(-\frac{1}{2r}(b-\mu)^2\right) \frac{1}{2\delta^2} \exp\left(-\frac{1}{2\delta^2}\right) dr$$

- NB 分布

$$\int_0^\infty f_{泊松(\lambda)}(k) \, f_{Gamm}(r, \frac{1-p}{p}) \, d\lambda$$

$$= \int_0^\infty \frac{\lambda^k}{k!} e^{-\lambda}.$$