

$$f(x,y) = \frac{1}{2\pi\sigma^2} \exp\Big(-\frac{(x-\mu_x)^2+(y-\mu_y)^2}{2\sigma^2}\Big) \quad = f(\mathbf{x}) = \frac{1}{\sqrt{(2\pi)^n|\Sigma|}} \exp\Big(-\frac{1}{2}(\mathbf{x}-\boldsymbol{\mu})^T\Sigma^{-1}(\mathbf{x}-\boldsymbol{\mu})\Big)$$

