

$$|01\rangle = \frac{m\omega}{\hbar} \sqrt{\frac{2}{\pi}} y e^{\frac{-\kappa^2}{2} (x^2 + y^2)}$$

$$|10\rangle = \frac{m\omega}{\hbar} \sqrt{\frac{2}{\pi}} x e^{\frac{-\kappa^2}{2} (x^2 + y^2)}$$

$$\text{where } \kappa = \sqrt{\frac{m\omega}{\hbar}}$$