

Beispiele für Kugel flächen fktn:

$$Y_{00}(\vartheta, \varphi) = \frac{1}{\sqrt{4\pi}} \quad \dots \text{ s-Orbital}$$

$$Y_{10}(\vartheta, \varphi) = \sqrt{\frac{3}{4\pi}} \cos \vartheta$$

$$Y_{1\pm 1}(\vartheta, \varphi) = \mp \sqrt{\frac{3}{8\pi}} \sin \vartheta e^{\pm i\varphi}$$

} p-Orbitale

$$Y_{20}(\vartheta, \varphi) = \sqrt{\frac{5}{16\pi}} (3 \cos^2 \vartheta - 1)$$

$$Y_{2\pm 1}(\vartheta, \varphi) = \mp \sqrt{\frac{15}{8\pi}} \sin \vartheta \cos \vartheta e^{\pm i\varphi}$$

$$Y_{2\pm 2}(\vartheta, \varphi) = \sqrt{\frac{15}{32\pi}} \sin^2 \vartheta e^{\pm i2\varphi}$$

} d-Orbitale

Polar diagramme

