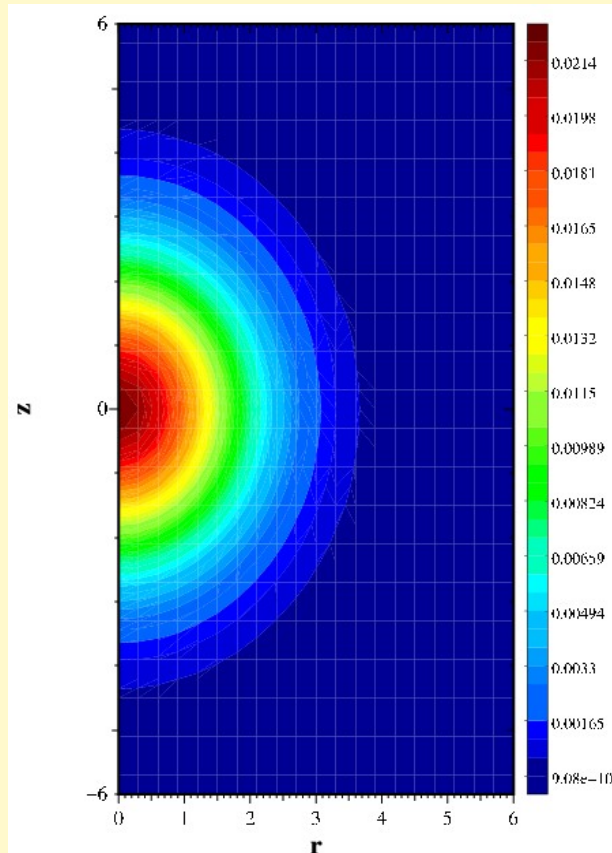
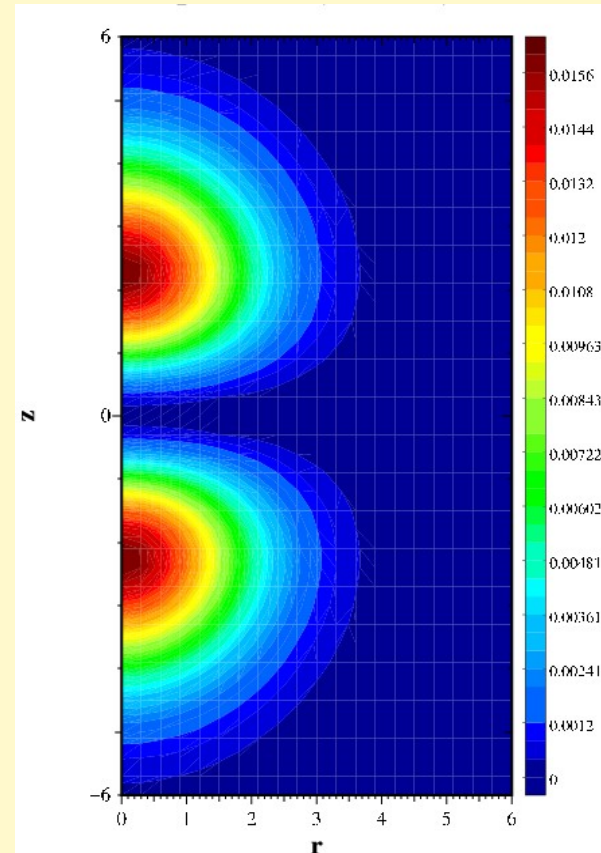


Deformed harmonic oscillator ($\delta=0.3$) without spin-orbit term:
probability density for single-particle quantum states

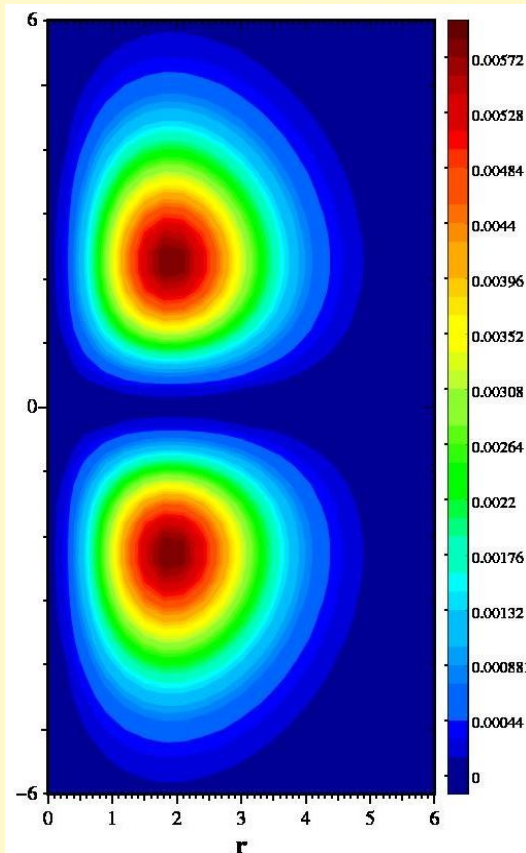


$$n_z = 0, n_\rho = 0, m_1 = 0$$

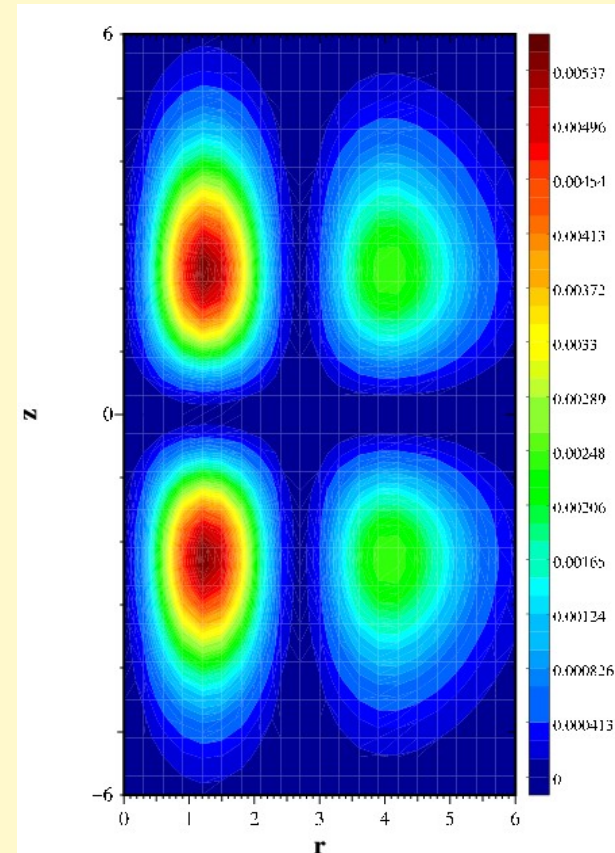


$$n_z = 1, n_\rho = 0, m_1 = 0$$

Deformed harmonic oscillator ($\delta=0.3$) without spin-orbit term:
probability density for single-particle quantum states



$$n_z = 1, n_\rho = 0, m_1 = 1$$



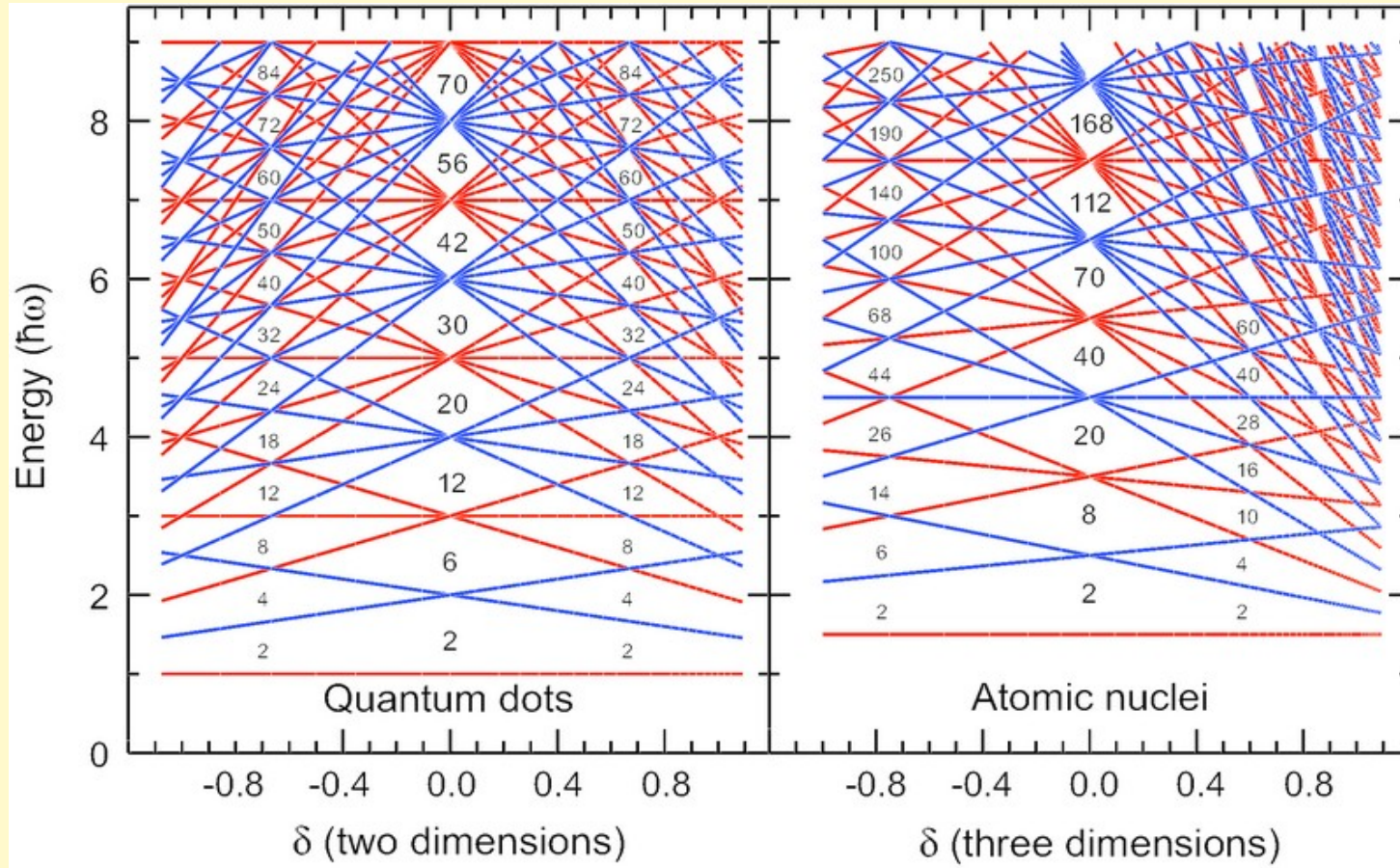
$$n_z = 1, n_\rho = 1, m_1 = 1$$

Single-particle energies vs. deformation

right side: deformed harmonic oscillator without spin-orbit term

red lines: + parity, blue lines: - parity

Ref: MSUCL-1345, p. 96 (Nov. 2006)



Deformed Woods-Saxon shell model with spin-orbit term

Ref: Russell Kegley, Ph.D. thesis (Vanderbilt, 1996)

neutron single-particle
levels for Strontium-99

solid lines: + parity
broken lines: - parity

