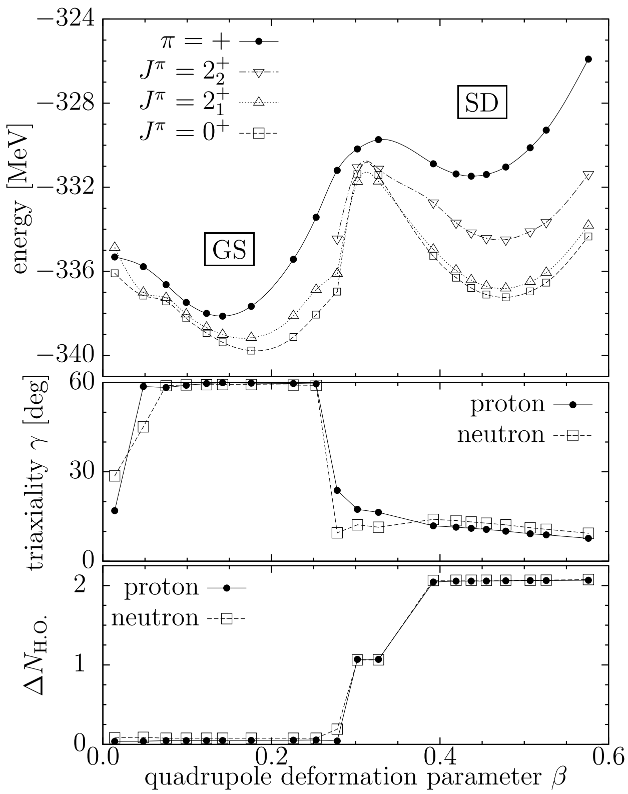

FIG. 1: (upper) Energies projected to positive parity states, $J^\pi = 0^+$ and 2^+ states, (middle) the triaxiality γ for protons and neutrons, and (lower) the H.O. values relative to lowest allowed states are plotted as functions of the quadrupole deformation parameter β of the total system.

performed for the $J^\pi = 2^+$ states. Those energy curves have two local minima at $\beta \sim 0.2$ and 0.5, which are labeled GS and SD minima, respectively, because the GCM results show that these minima correspond to the GS and the SD states, respectively, as explained later. In the energy curves projected to positive parity states, the energy gap between the GS and SD minima is approximately 6.7 MeV, while the gap decreases to 2.5 MeV after the AMP to $J^\pi = 0^+$ states.

The values of triaxiality γ for protons and those for neutrons are similar in the entire β region (the middle panel of Fig. 1). In the small β region, the system forms an oblate shape with $\gamma \sim 60^\circ$, while in the large β region around the SD minimum, it forms a triaxial deformation with $\gamma \sim 10^\circ$. Density distributions of the obtained wave function at the SD minimum $[(\beta, \gamma) = (0.478, 11.2^\circ)]$ are shown in Fig. 2. Because of triaxial deformations around the SD minimum, each wave function contains different K components, and two $J^\pi = 2^+$ states are obtained after diagonalizing those different K components, i.e., K-mixing