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Microscopic description of shape coexistence/mixing phenomena in the A=80-100 region

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We have investigated the oblate-prolate shape coexistence/mixing phenomena in proton-rich nuclei around 68Se and 72Kr by means of the adiabatic self-consistent collective coordinate (ASCC) method.
For 68Se and 72Kr, it is shown that the collective path extracted from the TDHFB phase space of large dimensions runs approximately along the valley that exists in the triaxially deformed region and connects the oblate and prolate local minima in the collective potential energy surface.
On the basis of the ASCC method, we have derived the quantum collective Hamiltonian which describes the coupled collective motion of the large-amplitude vibration responsible for the oblate-prolate shape mixing and the three-dimensional rotation of the triaxial shape.
The calculation produces the oblate ground-state band and the excited prolate band.
The basic pattern of shape coexistence/mixing phenomena is reproduced using the one-dimensional collective path in the two-dimensional beta-gamma plane. It is also shown that the shape mixing decreases as the angular momentum increases.
Preliminary results of ASCC calculation for low-lying states of N=Z nuclei, such as the triaxial nucleus 64Ge and the spherical-oblate-prolate shape coexisting nucleus 80Zr, and the transitional nuclei around 100Mo will also be presented.

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