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Shape coexistence in ^{44}S

The disappearance of N=28 magicity results in strong quadrupole deformation and shape coexistence in nuclei in this region. Especially in ^{44}S, theoretical studies indicate large shape fluctuations in the ground state [1, 2]. The one-nucleon knockout reactions can be a useful probe to investigate the ground state configuration. The spectroscopic factors can provide information about the single-particle structure of nuclei and can be useful in exploring the nuclear shape. In this work, the antisymmetrized molecular dynamics (AMD) with generator coordinate method (GCM) is used to study the shape coexistence in ^{44}S. The overlap amplitudes and spectroscopic factors are calculated, and the ground state configuration is discussed.
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