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^{16}O + ^{16}O molecular structures of superdeformed bands in S isotopes YASUTAKA TANIGUCHI, Nihon Institute of Medical Sciense — Structures of excited states in $^{33\text{-}36}$S have been investigated by using the antisymmetrized molecular dynamics and the generator coordinate method (GCM). GCM basis wave functions are calculated by energy variation with a constraint on a quadrupole deformation parameter β. By performing GCM after parity and angular momentum projections, coexistence of positive- and negative-parity superdeformed (SD) bands are obtained, as well as low-lying states. The SD bands have structures of ^{16}O + ^{16}O + valence neutrons in molecular orbitals around two ^{16}O cores in a cluster picture.

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