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Candidate for the superdeformed band in ^{32}S MASATOSHI ITOH, CYRIC, Tohoku University, HARUTAKA SAKAGUCHI, SATOSHI KISHI, Department of Physics, Kyoto University, RCNP-E200 COLLABORATION — In the measurement of inelastic α scattering for the isoscalar giant dipole resonance in ^{32}S , we have found the candidate state of the head of the superdeformed band, which has been searched during 20 years by many researchers in the world. It is interesting because the superdeformed band of ^{32}S is a clue to understand the relation between the superdeformed state and the molecular resonance such as $^{16}\text{O} + ^{16}\text{O}$. The experiment was performed using 400 MeV α particles from the RCNP ring cyclotron. The background-free energy spectra at angles from 0° to 10° were obtained by applying the optics of the GRAND RAIDEN spectrometer. The J^π values were determined by the multipole decomposition analysis. The excitation energies and moment of inertia of the observed superdeformed band were consistent with the theoretical prediction.

Masatoshi Itoh
CYRIC, Tohoku University

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