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Strongly Coupled Rotational Band in ^{33}Mg ¹ ANDREA L. RICHARD, Ohio University, HEATHER L. CRAWFORD, Lawrence Berkeley National Laboratory, NSCL E11029 TEAM — The "Island of Inversion" at $N \sim 20$ for the neon, sodium, and magnesium isotopes has long been an area of interest both experimentally and theoretically due to the subtle competition between $0p-0h$ and $np-nh$ configurations leading to deformed shapes. However, the presence of rotational band structures, which are fingerprints of deformed shapes, have only recently been observed in this region. A measurement of the low-lying level structure of ^{33}Mg populated by a two-stage projectile fragmentation reaction and studied with GREYINA was performed at the NSCL. The newly identified rotational band level energies and γ -ray intensities, as well as other available experimental data on the ground state magnetic moment and intrinsic quadrupole moment show good agreement with the strong-coupling limit of a rotational model. We present here the analysis and interpretation of the available experimental observables for ^{33}Mg within a rotational framework.

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