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Shape and structure of N=Z ^{64}Ge; Electromagnetic transition rates from the application of the Recoil Distance Method to knock-out reactions.[1] K. STAROSTA, NSCL/MSU, A. DEWALD, IKP Koeln, and the NSCL06502 COLLABORATION — Transition rate measurements are reported for the 2_1^+ and 2_2^+ states in the N=Z nucleus ^{64}Ge. The measurement was done utilizing the Recoil Distance Method (RDM) and a unique combination of state of the art instruments at the National Superconducting Cyclotron Laboratory (NSCL). States of interest were populated via an intermediate energy single neutron knock-out reaction. RDM studies of knock-out and fragmentation reaction products hold the promise of reaching far from stability and providing lifetime information for intermediate-spin excited states in a wide range of exotic nuclei. The large-scale Shell Model calculations applying the recently developed GXPF1A interaction are in excellent agreement with the above results. Theoretical analysis suggests that ^{64}Ge is a collective γ-soft anharmonic vibrator.

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