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Single-neutron states and the role of the $\nu g_{9/2}$ orbital in ^{71}Zn[1] SIMONE BOTTONI, Physics Division, Argonne National Laboratory, ANL COLLABORATION, LBLN COLLABORATION, LLNL COLLABORATION, U. OF ROCHESTER COLLABORATION, U. OF MARYLAND COLLABORATION — The high-spin structure of ^{71}Zn has been investigated at ATLAS by means of the deep inelastic reaction ^{48}Ca+^{70}Zn at 25% above the Coulomb barrier, using GRETINA and CHICO-2. In conjunction with GAMMASPHERE data from a similar reaction with a ^{70}Zn beam on a thick ^{197}Au target, a level scheme associated with the 3.96 h, $9/2^+$ isomer in ^{71}Zn was delineated with the aim to achieve a better understanding of the nature of the neutron excitations close to N = 40. The level sequences built on the $g_{9/2}$ neutron orbital all appear to be of single-particle character. The results will be presented and compared with shell-model calculations using modern effective interactions.

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Simone Bottoni
Physics Division, Argonne National Laboratory

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