

Abstract Submitted
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Lifetime measurement of the yrast 8^+ state in ^{70}As CHRIS MORSE, HIRONORI IWASAKI, ANTOINE LEMASSON, TRAVIS BAUGHER, DANIEL BAZIN, JILL BERRYMAN, ALEXANDRA GADE, SEAN MCDANIEL, ANDREW RATKIEWICZ, STEVEN STROBERG, PHIL VOSS, DIRK WEISSHAAR, KATHRIN WIMMER, RYAN WINKLER, NSCL/MSU, ALFRED DEWALD, CHRISTOPH FRANSEN, IKP Cologne, ADAM NICHOLS, ROBERT WADSWORTH, York U. — In the $A \sim 70$ region of the nuclear chart, the structure of excited nuclear states is sensitive to the occupation of the $g_{9/2}$ orbital. In particular, the excited states of the odd-odd nucleus ^{70}As have been discussed in terms of the coupling of the valence proton and neutron to form two-particle configurations of $\pi g_{9/2} \nu g_{9/2}$ orbitals. To examine this, the lifetime of the 8^+ yrast state in ^{70}As was measured using the gamma-ray line shape technique at the NSCL. Gamma-rays emitted at the reaction target position were measured with the SeGA HPGe array in coincidence with reaction residues detected in the S800 spectrometer. The transition strength of the lowest 8^+ level, which is among the excited states suggested to be part of these two-particle configurations, was obtained from the measured lifetimes. The validity of this assignment to a $\pi g_{9/2} \nu g_{9/2}$ configuration and the possible evolution of such high-spin orbitals in neutron-deficient As nuclei will be discussed in light of the present results.

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