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Evidence for Multiple Negative-Parity Band Structure in ⁷¹Se¹ N.R. BAKER, R.A. KAYE, S.R. ARORA, Ohio Wesleyan University, J.K. BRUCK-MAN, Monmouth College, S.L. TABOR, T.A. HINNERS, C.R. HOFFMAN, S. LEE, Florida State University, J. DÖRING, BFS (Germany) — The negative-parity bands of ⁶⁹Se and ⁷³Se indicate a stark contrast between strong single-particle (⁶⁹Se) and collective (⁷³Se) behavior over a wide range of spins. However, only one negativeparity band has been observed so far in ⁷¹Se, making it difficult to see where it lies between these two very different cases. Thus, the goal of the present work was to extend the level scheme of ⁷¹Se as much as possible, with an emphasis on finding new negative-parity states. ⁷¹Se nuclei were produced at high spin following the 80-MeV ⁵⁴Fe (²³Na, αpn) reaction at Florida State University. $\gamma - \gamma$ coincidences were measured using an array of 10 Compton-suppressed Ge detectors which included three Clover detectors. From the coincidence relationships, new states were found that formed candidates for perhaps two new negative-parity bands. Cranked-shell model calculations indicate that one new band is associated with rigid- body rotation at high spin.

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