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Rotational Structure in Nuclei Near ^{66}Fe

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Studies of the “heavy” island of inversion near the $N=40$ isotones between Ca and Ni have, to date, focused on determining the degree of collectivity in even-even nuclei using properties of 2^+ transitions. While collective rotational structures are understood to be present, limited results are available to characterize these structures. In this work, we report on the results from an experiment conducted at the National Superconducting Cyclotron Laboratory (NSCL) at Michigan State University (MSU) using a secondary fragmentation reaction to populate higher angular momentum states. We discuss new transitions observed in ^{66}Fe and odd- A neighbors, ^{67}Co and ^{65}Fe , and the interpretation of these level schemes in terms of the rotational model of the nucleus.

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