

Evidence for a phase transition in neutron-rich Cd isotopes: Structure and decay of isomeric and ground states in neutron-rich Cd, Ag, Pd, Rh, and Ru isotopes identified in the fragmentation of Xe-136 at NSCL.

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Beta decay and isomeric decay of a number of isotopes of Cd, Ag, Pd, Rh, and Ru isotopes have been studied using the Beta Counting System at the National Superconducting Cyclotron Laboratory at Michigan State University. These isotopes were produced by fragmentation of a 120-MeV·A ¹³⁶Xe beam and separated using the A1900 fragment separator. From comparisons with the structure of neutron-rich Te isotopes, it has been possible to identify ¹²⁵Cd₇₇ as the point where the collective and intruder structures that determine the observed levels in mid-shell Cd isotopes undergo a phase transition to structures more characteristic of very neutron-rich nuclei.