Abstract Submitted
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Nuclear level density and gamma strength function in ^{64}Fe M. K. SMITH, A. SPYROU, T. AHN, A. C. DOMBOS, S. N. LIDDICK, F. MONTES, F. NAQVI, D. RICHMAN, H. SCHATZ, J. BROWN, K. CHILDERS, B. P. CRIDER, C. J. PROKOP, E. DELEEUW, NSCL, Michigan State University, P. A. DEYOUNG, Hope College, C. LANGER, R. LEWIS, NSCL, Michigan State University, Z. MEISEL, University of Notre Dame, J. PEREIRA, S. J. QUINN, K. SCHMIDT, NSCL, Michigan State University, A. C. LARSEN, M. GUTTORMSEN, University of Oslo — The Fe-Cd mass region exhibits enhanced collectivity and an unexpected increased in gamma-decay probability at low energies. These effects could be significant for r-process nucleosynthesis, where masses, beta-decay probabilities, and neutron capture cross sections are among the most important inputs. Neutron capture is notoriously difficult to measure; so the recent development of an indirect technique to constrain neutron-captures far from stability is especially valuable. This is the beta-Oslo method, which allows the extraction of the nuclear level density and gamma-ray strength function to compute neutron-capture cross sections. This work reports on 64Fe, populated via beta-decay of 64Mn at the National Superconducting Cyclotron Laboratory and measured with the 4pi Summing NaI (SuN) total gamma-ray spectrometer.

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