

Abstract Submitted
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Direct lifetime measurement of excited states in ^{72}Ni KAROLINA KOLOS, University of Tennessee, DAVID MILLER, TRIUMF, ROBERT GRZYWACZ, University of Tennessee, HIRONORI IWASAKI, MSU/NSCL, MOHAMMAD AL-SHUDIFAT, University of Tennessee, DANIEL BAZIN, MSU/NSCL, CAROLL BINGHAM, University of Tennessee, THOMAS BRAUNROTH, University of Cologne, GIORDANO CERIZZA, University of Tennessee, ALEXANDRA GADE, MSU/NSCL, ANTOINE LEMASSON, GANIL, MIGUEL MADURGA, University of Tennessee, CHRIS MORSE, MSU/NSCL, MUSTAFA RAJABALI, TRIUMF, FRANCESCO RECCHIA, MSU/NSCL, LEE RIEDINGER, University of Tennessee, PHILLIP VOSS, Simon Fraser University, DIRK WEISSHAAR, MSU/NSCL, KATHRIN WIMMER, Central Michigan University/NSCL — The long isotopic chain of nickel contains three doubly-magic isotopes ^{48}Ni , ^{56}Ni and ^{78}Ni . The nuclei close to doubly magic systems with small number of valence nucleons can help in the understanding of shell closure effects, isomerism, and single particle states. The recent $B(E2; 2^+ \rightarrow 0^+)$ measurements at GANIL, and the 2^+ inelastic scattering cross-section measurements at NSCL, reveal unexpected collectivity in ^{70}Ni and ^{74}Ni . We measured electromagnetic transition rates in ^{72}Ni using the recoil distance technique coupled with the improved gamma-ray detection array GRETINA with the NSCL/Koln plunger at the NSCL. The excited 2_1^+ and 4_1^+ in ^{72}Ni states were populated by a one-proton knockout reaction of a ^{73}Cu secondary beam on beryllium target. Lifetimes were obtained by comparing the measured spectra to simulated ones based on an existing code which utilizes GEANT4 with the geometry of the present setup.

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