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Measurement of the $^{114}\text{Cd}(n,g)$ cross section using the Detector for Advanced Neutron Capture Experiments at LANL¹ K.T. ASSUMIN-GYIMAH, B.P. CRIDER, D. DUTTA, T.H. OGUNBEKU, D.P. SIWAKOTI, Department of Physics and Astronomy, MSU, Mississippi State, MS 39762, USA, A. COUTURE, C. FRY, C.J. PROKOP, J.L. ULLMANN, Los Alamos Neutron Science Center, LANL, Los Alamos, NM 87545, USA, S. LYONS, PNNL, Richland, WA 99352, USA — The ^{114}Cd nucleus can impact nondestructive assay techniques that utilize Cd for neutron absorption as well as nuclear astrophysics applications in the study of the s-process. A recent sensitivity study of s-process abundances found that the uncertainties of the cross section for neutron capture on ^{114}Cd have a significant impact on final abundance uncertainties. Therefore, precise knowledge of the $^{114}\text{Cd}(n,g)^{115}\text{Cd}$ cross section is critical across a large range of incident neutron energies. Additionally, information on ^{115}Cd Photon Strength Function (PSF) is essential for improving the reliability of calculations investigating the nature of possible M1 strength in ^{114}Cd and properties of nuclei far from stability. We will present preliminary results from the measurement of neutron capture cross section of ^{114}Cd for incident neutron energies from 1 keV to 300 keV performed with the Detector for Advanced Neutron Capture Experiments (DANCE) at the Los Alamos Neutron Science Center.

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