

Abstract Submitted
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Simultaneous measurement of (n, γ) and (n,fission) cross sections with the DANCE array¹ T.A. BREDEWEG, M. JANDEL, M.M. FOWLER, E.M. BOND, J.M. O'DONNELL, R. REIFARTH, R.S. RUNDBERG, J.L. ULLMANN, D.J. VIEIRA, J.B. WILHELMY, J.M. WOUTERS, LANL, R.A. MACRI, C.Y. WU, J.A. BECKER, LLNL — We have recently begun a program of high precision measurements of the key production and destruction reactions of important radiochemical diagnostic isotopes, including several isotopes of uranium, plutonium and americium. The Detector for Advanced Neutron Capture Experiments (DANCE), a 4π BaF₂ array located at the Los Alamos Neutron Science Center, will be used to measure the neutron capture cross sections for most of the isotopes of interest. Since neutron capture measurements on many of the actinides are complicated by the presence of γ -rays arising from low-energy neutron-induced fission, we are currently using a dual parallel-plate avalanche counter with the target material electro-deposited directly on the center cathode foil. This design provides a high efficiency for detecting fission fragments and allows loading of pre-assembled target/detector assemblies into the neutron beam line at DANCE. An outline of the current experimental program will be presented as well as results from measurements on ²³⁵U and ²⁵²Cf that utilized the fission-tag detector.

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