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New measurements of (n,γ) and (n,fission) cross sections and capture-to-fission ratios for ^{233,235}U and ^{239}Pu using the DANCE 4π BaF_2 array[1] T.A. BREDEWEG, M. JANDEL, M.M. FOWLER, E.M. BOND, R.C. HAIGHT, A.L. KEKSIS, J.M. O'DONNELL, R. REIFARTH, R.S. RUNDBERG, J.L. ULLMANN, D.J. VIEIRA, J.B. WILHELMY, J.M. WOUTERS, LANL, J.A. BECKER, W.E. PARKER, C.Y. WU, LLNL, J.D. BAKER, C.A. MCGRATH, INL
— Accurate neutron nuclear data are important to many issues in stockpile stewardship, nuclear reactor design and re-certification, nuclear non-proliferation and nuclear forensics. Of particular interest are the production and destruction reactions for all of the major and most of the minor actinides. The competition between capture and fission in many of the actinides presents both an obstacle and an opportunity for large γ detector arrays such as DANCE. Additional instrumentation is required to deconvolve the two contributions to the total observed γ-ray spectrum. However, conducting a simultaneous measurement can simplify background treatment and other sources of systematic uncertainty. An outline of the current experimental program will be presented along with results from neutron capture measurements on ^{233,235}U and ^{239}Pu.

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