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Surrogate Reaction Measurements of Fission γ-ray Spectra with Liberace and STARS. C.C. JEWETT, University of California at Berkeley, S.R. LESHER, University of Richmond, J.T. BURKE, LLNL, C.W. BEAUSANG, University of Richmond, L.A. BERNSTEIN, LLNL, H. AI, A.W. Wright Nuclear Structure Laboratory, J.A. CHURCH, LLNL, R.M. CLARK, M.A. DELEPLANQUE, LBNL, F.S. DIETRICH, J. ESCHER, LLNL, P. FALLON, I.Y. LEE, LBNL, B.F. LYLES, LLNL, A.O. MACCHIAVELLI, M.A. MCMAHAN, LBNL, K.J. MOODY, E.B. NORMAN, LLNL, L. PHAIR, E. RODRIGUEZ-VIEITEZ, LBNL — Very few high-resolution measurements have been made of the prompt γ-ray spectrum following non-spontaneous fission. However, this information is useful for stockpile stewardship and can also provide a wealth of information about the fission process. Recent experiments using STARS+LIBERACE at the 88-Inch cyclotron designed to determine surrogate neutron-induced cross sections in the Uranium isotopic chain have also produced a wide range of triple-coincident particle-fission-γ data which can be used to determine fission γ-ray spectra for $^{234-238}$U and ^{235,238}Np compound nuclei. In this talk we will present the spectra from these different systems and compare γ-ray spectra from different "chance" fission channels over a wide range of isotopes and energies. This work was sponsored by UC-LLNL under Contract No. W-7405-Eng-48 and Grant Nos. DE-FG-05NA25929, DE-FG52-06NA26206, and DE-FG02-05ER41379.

Cybele Jewett
University of California at Berkeley

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