

**Monday,
July 29th
At 3:45 pm**



Fission Product Chain Yield Measurements

ABSTRACT: Fission product yields (FPYs) represent an important nuclear fission observable for basic science as well as numerous applications. Fission product chain yields were historically determined by dissolution and chemical separations of fissile samples irradiated in carefully controlled fission chamber experiments^{1,2,3}. The elemental/isotopic yield of each fission product was determined by beta/gamma counting of the chemically separated fractions. This technique provided the means to determine absolute fission product yields (yield per fission, or Y_i/f for the i^{th} fission product) that are included in the various international evaluated nuclear data libraries, and ultimately used for modeling and simulation of multiplying systems. However, re-evaluations of the historic measurements conducted in the late 2000s for neutron-induced fission of ^{235}U and ^{239}Pu ^{2,3,4} highlighted disagreement between numerous measurements that were used in the evaluations. This motivated new, targeted experimental programs, both in France and in the United States, to understand and resolve these disagreements. In this presentation I will highlight recent efforts to address these discrepancies using both energy-differential and energy-integral measurements, and outline our plans to complete the work over the next several years.

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¹ G.P. Ford and A.E. Norris, LA-6129, Los Alamos Scientific Laboratory (1976) ² H.D. Selby, et al., Nucl. Data Sheets 111, 2891 (2010) ³ M.B. Chadwick, et al., Nucl. Data Sheets 111, 2923 (2010) ⁴ J. Laurec, et al., Nucl. Data Sheets 111, 2965 (2010)

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Refreshments will be
served at 3:30 pm



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