

Abstract Submitted  
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**Total Kinetic Energy Release in the Fast Neutron Induced Fission of  $^{235}\text{U}$** <sup>1</sup> WALTER LOVELAND, RICARDO YANEZ, Oregon State University — We have measured the total kinetic energy (TKE) release, its variance and associated fission product mass distributions for the neutron induced fission of  $^{235}\text{U}$  for  $E_n=2-90$  MeV using the 2E method. The neutron energies were determined, event by event, by time of flight measurements with the white spectrum neutron beam from LANSCE. The TKE decreases with increasing neutron energy. This TKE decrease is due to increasing symmetric fission (and decreasing asymmetric fission) with increasing neutron energy, in accord with Brosa model predictions. Our measurement of the TKE release for  $^{235}\text{U}(n_{th},f)$  is in excellent agreement with the known value, indicating our measurements are absolute measurements. The TKE variances are sensitive indicators of  $n^{th}$  chance fission. Due to the occurrence of  $n^{th}$  chance fission and pre-fission neutron emission, the average fissioning system and its excitation energy is a complex function of the incident neutron energy. Detailed comparisons of our data with previous measurements will be made.

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