

Abstract Submitted
for the FWS21 Meeting of
The American Physical Society

Simulations of Alpha Accompanied Ternary Fission JONATHAN FUZARO ALENCAR, California Polytechnic State University, San Luis Obispo, NIFFTE COLLABORATION — Alpha accompanied ternary fission is the process by which the nucleus of an atom breaks apart into three charged fragments including an alpha particle. The Neutron Induced Fission Fragment Tracking Experiment (NIFFTE) uses a nuclear fission time projection chamber (TPC) to construct three-dimensional ionization profiles of fission fragments. To compare data analysis done by NIFFTE on a $U258(n,f)/U235(n,f)$ cross-section, dynamic simulations of alpha accompanied ternary fission were reproduced using Monte Carlo methods to generate initial conditions at the nuclear scission point. Ionization profiles within the TPC were then emulated by numerical integration of the Bethe-Bloch formula. The current status of the simulations fidelity and agreement with experimental results will be presented.

Jonathan Fuzaro Alencar
California Polytechnic State University, San Luis Obispo

Date submitted: 15 Sep 2021

Electronic form version 1.4