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Detecting and Sorting Alpha Accompanied Ternary Fission in the NIFFTE TPC NICHOLAS ANDROSKI, California Polytechnic State University, San Luis Obispo, NIFFTE COLLABORATION — The Neutron Induced Fission Fragment Tracking Experiment (NIFFTE) is a MICROMEGAS Time Projection Chamber (TPC) used to detect nuclear fission events induced by a pulsed beam from the Los Alamos Neutron Science Center (LANSCE). While most fission events are binary, involving a nucleus breaking into two charged fragments, there is a chance of ternary fission when three charged fragments are produced, typically including an alpha particle. To sort these rare alpha ternary events from NIFFTE experimental data on a U238/U235 target, a Hough Transform is applied for track reconstruction and a series of cuts are made on the tracks, such as a distance of closest approach (DCA) test. The candidate tracks are then sorted into populations based on their length and energy deposited within the TPC gas, and visually sorted. Current status on the effectiveness of the sorting algorithm and ternary to binary fission counts will be presented.

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