Simulations for the NIFFTE Time Projection Chamber REMING-
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The Neutron Induced Fission Fragment Tracking Experiment (NIFFTE) collabora-
tion's Time Projection Chamber (TPC) is designed to make high precision fission
cross-section measurements. These measurements have long-term applications for
future generations of nuclear power plant designs. An important component of this
project is accurate simulation of the active volume including the physical features
of the tracks and the electronics. Tracks are generated using the Geometry And
Tracking (Geant4) simulation code, while the detector response simulation is custom
written. After reading in tracks, from the Geant4 simulations, the detector response
simulation transforms the data using a series of modules with behavior characterized
by the TPC design. Asynchronous trigger, 3-D charge diffusion, capacitive charge
sharing, digitization, random trigger cells, and noise from the electronics have been
modeled. The detector response simulation was designed and written so that it
can be reused in future TPC projects. This talk will focus on how these detector
response modules are produced and used.

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