

Abstract Submitted
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the sreft (spatially resolving fission tracker) time projection chamber ESTHER LEAL CIDONCHA, CHRISTOPHER PROKOP, KYLE SCHMITT, Los Alamos National Laboratory — A new fission tracking detector SREFT is being developed at Los Alamos Neutron Science Center (LANSCE). It will offer the possibility to measure neutron beam imaging and flux monitoring, Fission Fragments Total Kinetic Energy (TKE) for hot samples and Fission Product Yields (FPY), Minor actinide fission Cross Section ratios, Fission Fragment Angular Distributions and anisotropies, and (n,α) and $(n,x\alpha)$ reactions. This design builds from the current FissionTPC used at LANL, with a focus on fission fragments. Without the requirement to detect recoil protons, this device can operate with modest segmentation (187 channels per anode). This leads to several simplifications and improvements for detector operation. The detector can also operate with gas pressures close to atmospheric, making it possible to use a thin-walled pressure vessel. Its small size allows it to be used for supporting measurements inside or in parallel with another detector. Placing it inside the DANCE detector it can be used to measure (n,f) reactions, this is required to study the fission gammas and subtract them from the capture gammas to study (n,γ) cross sections. It could also provide a measurement of the beam profile and flux in support for LENZ, that is used to measure (n,z) reactions.

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