

Time-Projection Chamber for Investigating the Spontaneous Fission of Superheavy Nuclei

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The study of spontaneous fission processes in heavy and superheavy nuclei remains an important task in nuclear physics. A Time-Projection Chamber (TPC) is a reliable tool for such investigations, enabling the detection of fission fragment trajectories, fragment energy measurements, and mass distributions of fission fragments. As part of our project, a TPC-based detector is being developed for application at the focal plane of the GRAND separator (SHE Factory). The focus is on the chamber configuration, the use of ^3He neutron counters, and evaluating the system's efficiency. This presentation will cover the operational principles of TPCs and their potential applications for studying the spontaneous fission of short-lived superheavy nuclei.

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