

flux near the targets and irradiation samples. The measurement methods and their examples are reviewed for tritium solid targets.

The third part is devoted to discuss the protection to tritium contamination problems due to unavoidable release of tritium gas from targets. Performance and effectiveness of tritium collection systems for intense D-T neutron sources shall be discussed on some examples. Tritium contamination incidents due to the faulted film powder of target surface are also reported in some real incident cases.

**ON THE FAST NEUTRON SPECTRA SHAPE IN  
THE NUCLEAR CONSTANT MEASUREMENT EXPERIMENTS  
WITH AN ELECTROSTATIC ACCELERATOR**

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A B S T R A C T

The approach to calculate the spectra of neutrons being produced in (p,n) reactions on the Van de Graaf accelerators has been considered. The model takes into account the actual layout of the solid tritium target and the irradiated sample as well as the target composition. The main spectrum parameters - the average energy  $E$  and the variants  $D$  - have been calculated for the real experiment.

"Problems Associated with the Production of Monoenergetic Neutrons"

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Neutron producing reactions ( $1 \text{ keV} < E_n < 19 \text{ MeV}$ ) have been investigated with respect to the neutron background production with the time-of-flight method employing pulsed proton or deuteron beams from the Van-de-Graaff accelerator. The largest fraction of