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P4.048 A neutron spectrometer based on diamond detector for D-D fusion neutron measurements on KSTAR

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Neutron spectrometer based on diamond detector has proposed for the D-D fusion neutron measurements at the KSTAR tokamak in future. Neutron flux monitoring and neutron spectrometry at the KSTAR tokamak as well as at fusion reactors are one of important diagnostics. Diamond has excellent properties in environments such as radiation harsh, high temperature, small size, and so on.

The aim of this work is to optimize a neutron spectrometer for the KSTAR tokamak applications. For the work, performance of fast-neutron spectrometer based on diamond detector has carried out using 2.45 MeV neutrons produced from a deuterium-deuterium neutron generator. Capability results of diamond fast-neutron spectrometer for neutron diagnostics on KSTAR will be presented in the conference.

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