

Abstract Submitted
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Absolute Calibration of the Neutron Monitoring System for NSTX¹ A.L. ROQUEMORE, D.S. DARROW, S.S. MEDLEY, PPPL — NSTX has a complement of six neutron detectors consisting of two fission chambers, one NE-451 ZnS scintillator and 3 plastic BC-400 scintillators. The primary purpose of the fission chambers is to provide an absolute calibration of the neutron emission rate, while the scintillator detectors monitor fast excursions in the neutron yield, due for instance to MHD events. Initially, a point-wise calibration was performed by introducing a ²⁵²Cf source on the midplane of NSTX at 10 toroidal locations. The more recent calibrations employed a commercial G-gauge model train and three different diameter circular tracks as a source transport. This method provided the most accurate calibration to date, as well as information on detector sensitivity with changes in plasma position. The results of the four insitu calibrations are presented and the technique of cross-calibration from pulse counting to current mode using low-yield plasma discharges will be discussed.

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