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Reducing the Spikes of Avalanche Photodiode Measurements at the National Spherical Torus Experiment Z.E. BRUBAKER, Carson-Newman College, E.L. FOLEY, Nova Photonics — Avalanche Photodiodes (APD) used at the National Spherical Torus Experiment (NSTX) make important measurements for the Motional Stark Effect (MSE) diagnostic. However, they are very sensitive, and if radiation consistently reaches these detectors they are damaged over time. Furthermore, they also display spikes in their readings, which greatly complicates the data analysis for MSE. Due to our Collisionally-Induced Fluorescence Motional Stark Effect diagnostic observing significant radiation despite being shielded by a 3 foot concrete wall, we must devise a plan for shielding our new Laser-Induced Fluorescence Motional Stark Effect diagnostic, as well as determining the best possible location for them. In order to reduce the amount of spikes seen in our readings and to preserve our detectors, I investigated the type of radiation responsible, the locations most affected, and tested various materials for shielding. Results will be presented.

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