

Abstract Submitted  
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**Geometry Calibration of the SVT in the CLAS12 Detector**<sup>1</sup> PETER DAVIES, University of Surrey, United Kingdom, GERARD GILFOYLE, University of Richmond, Virginia — A new detector called CLAS12 is being built in Hall B as part of the 12 GeV Upgrade at Jefferson Lab to learn how quarks and gluons form nuclei. The Silicon Vertex Tracker (SVT) is one of the subsystems designed to track the trajectory of charged particles as they are emitted from the target at large angles. The sensors of the SVT consist of long, narrow, strips embedded in a silicon substrate. There are 256 strips in a sensor, with a stereo angle of  $0 - 3^\circ$  degrees. The location of the strips must be known to a precision of a few microns in order to accurately reconstruct particle tracks with the required resolution of 50-60 microns. Our first step toward achieving this resolution was to validate the nominal geometry relative to the design specification. We also resolved differences between the design and the CLAS12, Geant4-based simulation code GEMC. We developed software to apply alignment shifts to the nominal design geometry from a survey of fiducial points on the structure that supports each sensor. The final geometry will be generated by a common package written in JAVA to ensure consistency between the simulation and Reconstruction codes. The code will be tested by studying the impact of known distortions of the nominal geometry in simulation.

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