

Abstract Submitted
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Impact of Temperature Changes on Drift Properties in a Straw Tube Chamber BRENT DRISCOLL, Carnegie Mellon U — The GlueX experiment at Jefferson Lab will use a straw-tube chamber as part of its charged particle tracking package. This chamber, the CDC, will measure the coordinate of tracks perpendicular to the anode wire to an accuracy of 150 microns, and while the temperature in the experimental hall will be monitored, it will be necessary to account for the impact of temperature changes on the drift properties of the gas being used in the chamber. A study has been performed to map out these properties as a function of temperature in a small prototype chamber at Carnegie Mellon. Cosmic rays have been studied with the chamber operated in the temperature range of 20 to 34 C. These temperature variations have led to measured changes in both the gas and the performance of the electronics. The results will be compared to calculations of the expected behavior and ultimately used in the calibration of the CDC in the running GlueX experiment. I will present details of the test setup, the measurements and the analysis of the data as well as a comparison to the expectations.

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