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Cosmic Ray Tests of Gas Electron Multipliers[1] LETRELL HARRIS, MICHAEL KOHL, Hampton University, SUPER BIGBITE SPECTROMETER COLLABORATION, MUSE COLLABORATION, HAMPTON UNIVERSITY COLLABORATION, DARKLIGHT COLLABORATION — The Super Bigbite Spectrometer (SBS) collaboration at Jefferson Laboratory (Jlab) is conducting an experimental program to measure the elastic form factors of nucleons. In association with Jlab, SBS Gas Electron Multipliers (GEMs) have been constructed by the University of Virginia (back trackers) and INFN in Italy (front trackers). The SBS GEMs measuring 40 x 150 cm^2 (front trackers) and 60 x 200 cm^2 (back trackers) in surface area are in the process of being conditioned and analyzed for tracking efficiency using cosmic rays in a clean room test lab before further assembly in the fall. These GEMs will be used to track the path of particles scattered off nuclear targets. Scintillators are placed both above and below GEM stacks to trigger a readout. In addition, Hampton University has also constructed a set of 10 x 10 cm^2 GEMs originally for the OLYMPUS experiment at DESY in Germany, which are now being used for both the MUSE experiment at Paul Scherrer Institute (PSI) in Switzerland and the DarkLight experiment at Jlab's Low Energy Recirculatory Facility (LERF), where they are in the process of being characterized with cosmic rays. This work has been supported by Jefferson Laboratory.

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