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Construction of a hadron calorimeter for Jefferson Lab Hall-A Super Bigbite Spectrometer[1] VAHE MAMYAN, Carnegie Mellone University — A "shashlik" hadron calorimeter is being constructed for the new Super Bigbite Spectrometer in Jefferson Lab Hall-A. The calorimeter will be used in nucleon-coincidence form-factor experiments taking advantage of Jefferson Labs' 12 GeV upgrade. An adiabatic light guide has been developed for the calorimeter based on laser cut acrylic sheets. A prototype module has been built to measure time resolution of the calorimeter for cosmic ray muons as well as to validate the Geant4 simulation. Several innovations in the calorimeter design will be discussed, in particular the choice of the scintillator, wave length shifter and the construction process of the light. The results of prototype tests is compared with Geant4 simulation for cosmic ray muons and prediction of HCal time and special resolution for hadrons in the 2-10 GeV/c momentum range will be presented.

[1]SBS COLLABORATION

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