# Performance Characterization Studies of sPHENIX Hadronic Calorimeter Scintillating Tiles

Saif Ali
*Georgia State University*
(sPHENIX Collaboration)
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sPHENIX is an experiment currently being built and will be installed at the Relativistic Heavy Ion Collider of Brookhaven National Lab (BNL). sPHENIX will measure jets and upsilons in Au+Au collisions of 200 GeV. sPHENIX is composed of a tracking and calorimeter system that includes a hadronic calorimeter (HCal) of two radial segments. The inner HCal will sit inside a 1.4T superconducting solenoid magnet, and the outer HCal will be located outside the magnet. The outer HCal has steel absorber plates while the inner HCal has aluminum absorber plates that both run parallel to the beam direction. Plastic scintillating tiles are sandwiched in between the absorber plates which are angled in such a way that a particle exiting the interaction point will hit four absorber plates. Once struck by particles, the scintillating tile produces light that is captured by a wavelength shifting fiber that routes the light out to silicon photo-multipliers (SiPM). Five outer HCal tiles and their signals are aggregated into a single calorimeter tower. The towers corresponding with the inner HCal tiles are comprised of four tiles. Each towers' batch of tiles will have a similar performance which will optimize the performance of the HCal. To achieve this, a performance characterization of each individual tile must be done. Georgia State University is leading this effort by testing and analyzing the tiles' response to cosmic rays. In order to calibrate the HCal, the results of the cosmic ray study will be used in conjunction with beam test results from an sPHENIX calorimeter system prototype. This talk focuses on the tile testing and analysis procedure as well as the performance characterization results of the HCal scintillating tiles that will aid in the calibration of the sPHENIX HCal system.