



Contribution ID: 10

Type: Poster

Studies of granularity of a hadronic calorimeter for tens-of-TeV jets at a 100 TeV pp collider

Jet substructure variables for hadronic jets with transverse momenta in the range from 2.5 TeV to 20 TeV were studied using several designs for the spatial size of calorimeter cells. The studies used the full Geant4 simulation of calorimeter response combined with realistic reconstruction of calorimeter clusters. In most cases, the results indicate that the performance of jet-substructure reconstruction improves with reducing cell size of a hadronic calorimeter from $\Delta\eta \times \Delta\phi = 0.087 \times 0.087$, which are similar to the cell sizes of the calorimeters of LHC experiments, by a factor of four, to 0.022×0.022 .

Author: Mr YEH, Chih-Hsiang (National Central University (TW))

Co-authors: Prof. KOTWAL, Ashutosh (Duke University); Dr PROUDFOOT, James (Argonne National Laboratory (US)); Dr TRAN, Nhan Viet (Fermi National Accelerator Lab. (US)); Dr CHEKANOV, Sergei (Argonne National Laboratory (US)); Prof. YU, Shin-Shan (National Central University (TW)); Dr SEN, Sourav (Duke University (US))

Presenter: Mr YEH, Chih-Hsiang (National Central University (TW))

Session Classification: Lunch @ MIT and Poster Session