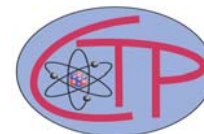




NEW YORK CITY COLLEGE OF TECHNOLOGY
Physics Department
Center for Theoretical Physics



Jet Physics at the Large Hadron Collider Run II



CMS Experiment at LHC, CERN
Data recorded: Sun Nov 14 19:31:39
Run/Event: 151076 / 1328520
Lumi section: 249

Presented by:

Simone Marzani

Massachusetts Institute of Technology

Jet 1, pt: 70.0 GeV

Thursday, March 19 at noon

Namm, Room 823

Abstract

Jet 0, pt: 205.1 GeV

This year marks the beginning of the second run of the Large Hadron Collider. The increased center-of-mass energy will make more stringent studies of properties of the Higgs boson possible and it will extend the reach for the search of physics Beyond the Standard Model. The exploration of this new energy regime cannot be successful without a careful (re)consideration of Standard Model processes and backgrounds, often dominated by strong interactions.

On the one hand, the hadronic decay products of high- p_T massive particle can be reconstructed into a single jet, demanding substructure techniques to separate signal from background jets. On the other hand, the large center-of-mass energy implies that we have to understand processes with many high- p_T jets.

I discuss calculations that aim to achieve a deeper understanding of QCD radiation within and between high- p_T jets, and that indicate how to develop more efficient and robust tools to explore the new energy frontier.