

4CF11-2011-000201

Abstract for an Invited Paper
for the 4CF11 Meeting of
the American Physical Society

Searching for Quark Compositeness at the LHC

MICHAEL SHUPE, University of Arizona

Are quarks - the building blocks that make up protons, neutrons, and hundreds of short-lived particles - the smallest level of structure? Or, does the “periodic table” of six quarks suggest that these, in turn, might be composed of more fundamental particles? Since early 2010, experiments at the Large Hadron Collider have been running steadily at 3.5 times the energy of the Fermilab TeVatron. This jump in energy translates directly into a jump to smaller distance scales - making quark compositeness one of the first things to look for at the LHC. I will talk about progress by the ATLAS experiment based on the full 2010 dataset, and its implications for pushing further into this new frontier.