LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS (LEPP)

Journal Club

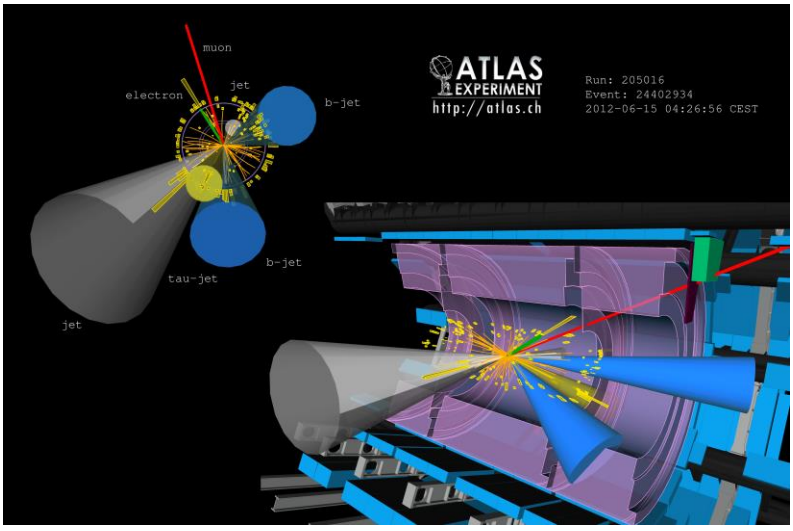
Peter Onyisi

UT Austin

Studying the top quark-Higgs boson coupling at ATLAS

The Higgs boson's coupling to the top quark, the top Yukawa coupling, is enormous and yet is so far primarily measured indirectly through loop-induced processes. The associated production of a top quark pair and a Higgs boson (ttH) provides an independent measurement of this coupling using a tree-level process, which allows us to constrain (or observe) potential physics beyond the Standard Model.

In addition, non-Standard Model-like top quark-Higgs interactions are poorly constrained by low-energy measurements compared to those of lighter quarks, and there is significant scope to observe, for example, flavor-changing neutral currents. I will discuss ATLAS searches for ttH production and limits on the t -> Hq branching fraction using LHC Run 1 data.



Friday

Apr. 29, 2016

4:00pm

301 Physical Sciences Bldg.