

PHYSICS AND ASTRONOMY COLLOQUIUM

Ricardo Eusebi, Ph.D.

Texas A&M University

The Tip of the Iceberg: Electroweak Symmetry Breaking in the Post-Higgs Era

The discovery of the Higgs boson by the CMS and ATLAS experiments at the Large Hadron Collider gave the first experimental insight into the mechanism of mass generation for fundamental particles. Since then the Higgs field behavior was found to match very well with theoretical predictions. While this is encouraging, a bigger picture is still missing.

The mechanism does not predict the mass of fundamental particles; why are they what they are? In addition, several theories use and extend this mechanism beyond the minimal necessary working conditions, predicting a particle spectrum of scalar Higgs bosons and even more exotic particles. Is nature working on these minimal conditions? Are there more Higgs bosons to be found?

This talk will summarize the latest results on Higgs properties from the CMS experiment, the recent results in the search for the bigger picture with emphasis on those analysis lead by my group at TAMU.

The theory that describes the origin of mass from the fundamental laws of physics is not fully understood yet and the variety of questions that remain make it clear that the discovery of the Higgs boson could just have been the tip of the iceberg.



THURSDAY, OCTOBER 16, 2014 | 4:00 PM | HAWKING AUDITORIUM



PHYSICS & ASTRONOMY
TEXAS A&M UNIVERSITY