

THE UNIVERSITY OF HONG KONG
COLLOQUIUM SERIES IN PHYSICS DEPARTMENT

Discovery of Higgs-like particle in CERN

Prof. Albert de Roeck & Prof. Joe Incandela
European Organization for Nuclear Research (CERN)

Time: Friday, 13 July, 2012, 10:30 a.m.

Venue: P1, Chong Yuet Ming Chemistry Building, HKU

Abstract:

Geneva, 4 July 2012. At a seminar held at CERN as a curtain raiser to the year's major particle physics conference, ICHEP2012 in Melbourne, the ATLAS and CMS experiments presented their latest preliminary results in the search for the long sought Higgs particle. Both experiments observe a new particle in the mass region around 125-126 GeV.

The next step will be to determine the precise nature of the particle and its significance for our understanding of the universe. Are its properties as expected for the long-sought Higgs boson, the final missing ingredient in the Standard Model of particle physics? Or is it something more exotic? The Standard Model describes the fundamental particles from which we, and every visible thing in the universe, are made, and the forces acting between them. All the matter that we can see, however, appears to be no more than about 4% of the total. A more exotic version of the Higgs particle could be a bridge to understanding the 96% of the universe that remains obscure.

In this colloquium an overview of the running of the LHC in 2012 will be presented as well as some very new results of the CMS experiment. The data on the Higgs search and observation will be presented.

About the Speakers:

Prof. Albert de Roeck is a senior research scientist and staff member at CERN. After obtaining his PhD at the University of Antwerp, he spent 10 years at the German particle physics laboratory, DESY, where he and his team made very precise measurements of the quark and gluon structure of the proton. In the late 90's his interest turned to the possibility to discover new physics, in particular Supersymmetry and Extra Dimensions, and he returned to CERN and joined

an experiment at the large electron-positron collider LEP.

Now he is one of the leaders of the physics program and preparation for physics analysis at the CMS experiment at the LHC.



Prof. Joe Incandela is a professor of Physics at the University of California, Santa Barbara (UCSB). He obtained his PhD at the University of Chicago. His research interests include W and Z bosons (pre-LEP), search for charged Higgs bosons, CDF Si detector, and search for top with lifetime b-tagging. Prof. Incandela has been based at CERN since 2007 and was the fourth CMS Spokesperson.



Physics colloquium series is organized to introduce cutting edge researches and new development in physics, designed to be suitable to graduate and undergraduate students, and also to scientists working on different fields. Each colloquium will generally start with an extensive introduction of the background of the field, followed by forefront research topics and results. The colloquium will serve as an education forum for students and laymen alike, and also serve as a platform for exchange and update their knowledge of various branches of physics among academic staff members.

Coffee and tea will be served 20 minutes prior to the colloquium

Anyone interested is welcome to attend

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