

LNF GENERAL SEMINARS

Challenges in Higgs Phenomenology

January 24, 2013

Auditorium Bruno Touschek

14:30 **Terrance Figy (University of Manchester):**

Higgs boson production via vector boson fusion

Abstract I will discuss the phenomenology of Higgs boson production via vector boson fusion (VBF), as well as the impact of anomalous couplings and next-to-leading order corrections on the production cross section and kinematic distributions. I will also discuss the calculation of the radiative corrections for electroweak Higgs boson plus three-jet production (VBF plus a jet) and its relevancy in the computation of the central jet veto efficiency.

15:30 **Francesco Fabozzi (Potenza U. & INFN Napoli):**

Search for the Standard Model Higgs boson at CMS

Abstract: I will present the status of the Standard Model Higgs boson search at the CMS experiment at the LHC. The results are based on proton-proton collisions data corresponding to integrated luminosities of up to 5.1 fb^{-1} at $\sqrt{s} = 7 \text{ TeV}$ and 12.2 fb^{-1} at 8 TeV . The observation of a new boson at a mass near 125 GeV has been confirmed by the analysis of the new data and first measurements of the boson properties have been delivered.

16:30 **Andrea Gabrielli (La Sapienza U. & INFN Roma):**

Status of the Standard Model Higgs boson searches with the ATLAS detector

Abstract: I will present the results, based on proton-proton collision data recorded at a centre-of-mass energy of 7 TeV in 2011 and 8 TeV in 2012, for the observation of a new Higgs-like particle at 125 GeV. I will also discuss the first measurements of its properties, such as its mass, couplings, spin and CP values.