Contribution ID: **4** Type: **not specified**

The Higgs Boson

Wednesday 17 July 2013 09:00 (1h 30m)

After only two years of running the ATLAS and CMS experiments have delivered on the main task of the LHC program: the discovery of a Higgs boson arising from the spontaneous breaking of the electroweak symmetry, as proposed almost 50 years ago. I will introduce the Higgs mechanism and illustrate its role in the Standard Model of particle physics and discuss what constitutes the discovery'. Since July 4th 2012 the LHC experiments have studied many facets of this new particle, leading CERN to move from the official categorization asHiggs-like particle' to 'Standard-Model-like Higgs particle'. I will discuss which tests and measurements are in the focus of such studies, what the impact of theoretical physics is, and what theorists expect from the LHC once it starts up again with almost twice its previous energy.

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