



ΓΕΝΙΚΟ ΣΕΜΙΝΑΡΙΟ ΤΜΗΜΑΤΟΣ ΦΥΣΙΚΗΣ

PHYSICS COLLOQUIUM

Thursday, 7 February 2013

17:00 -18:00

3rd Floor Seminar Room

“The quest for the Higgs boson and the LHC”

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Abstract

In the past 20 years, the Standard Model of elementary particles and their interactions has provided a remarkably accurate description of all experiments with and without high-energy accelerators, establishing that we understand the “physics of the very small” up to energy scales of 100 GeV. The Large Hadron Collider of CERN was conceived to probe the physics of the next frontier, that of the TeV energy scale, providing a definitive statement on whether the infamous Higgs boson exists, but also looking for “new physics”. In July 2012, the two general-purpose experiments announced the observation of a new massive boson, consistent with the very Higgs boson of the Standard Model, possibly signalling the end of a forty-year hunt. The talk will present a broad-brush picture of the why, the what and the how this search has been carried out, along with the latest results since the first announcement. We will conclude with the implications of the new findings on possible physics “beyond the SM”, along with a short summary of the status of some key searches for new physics.