Colloquium Ehrenfestii

Date: Wednesday 8 February 2012
Speaker: Ivo van Vulpen (NIKHEF)

Title: The search for the Higgs boson at the LHC.

Abstract
One of the main goals of the Large Hadron Collider (LHC) is to search for evidence of the illustrious Higgs boson. This particle, although never seen, is one of the vital ingredients in the formulation of the Standard Model of elementary particles.
It is at the heart of our current understanding of electroweak symmetry breaking and allows for masses for the gauge bosons and fermions.

In 2011 the experiments at the Large Hadron collider (LHC) have collected and analyzed a large amount of proton-proton collisions at a centre-of-mass energy of 7 TeV. At the end of 2011 the CMS and ATLAS experiments have presented their results in this endeavor, hinting to a possible excess of data compatible with the Higgs boson, but unable to provide a definite yes/no answer to it's existence. I will give an overview of the search for the Higgs boson, discuss the current results in detail and will hopefully convince you that the discovery, or exclusion of the Higgs boson is only a few months away.