

# Predictions for Higgs signal and background processes at the LHC

Prof. Dr. Stefan Dittmaier  
Universität Freiburg

One of the major goals at the LHC experiment is to unravel the mechanism of electroweak symmetry breaking and the origin of particle masses. In this context the Standard Model of particle physics predicts the existence of a so far undiscovered particle - the Higgs boson - which plays the role of a quantum excitation of the Higgs field that fills space and time with an omnipresent vacuum expectation value. Interaction with this vacuum expectation value lends particles their masses. In this talk the basic search strategy for the Higgs boson at the LHC is reviewed with an emphasis on the theoretical predictions for the Higgs signal and background processes, needed in the experimental analysis.