

Composite Higgs Search at the LHC

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One of the major goals at the LHC will be the search for Higgs boson(s). Once found, ambitious measurements and analyses will have to be performed in order to establish experimentally the Higgs mechanism as being responsible for the creation of particle masses without violating gauge principles.

I will present the composite Higgs model as a possible alternative to the elementary Higgs picture. In this model the Higgs boson emerges as composite bound state from a strongly interacting sector. It is identified with the pseudo-Goldstone boson of a global symmetry G of the strong sector which is spontaneously broken down to a subgroup H . Its couplings to matter and gauge particles are modified with respect to the Standard Model Higgs couplings. After a discussion of the bounds from electroweak precision data and direct Higgs boson searches at LEP and Tevatron, the modifications in Higgs boson production and decay channels and their implication for Higgs discovery at the LHC will be presented. They turn out to be significant for certain values of the parameters.

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