Open Symposium - European Strategy Preparatory Group



Contribution ID: 112

Type: not specified

Implications of LHC results for TeV-scale physics: Exotics

Exotics refer, in the context of this document, to all new physics that is not directly related to electroweak symmetry breaking, nor to flavor and that has not an important component of missing energy. The number of models that fall in this category is too large to be covered in this kind of document so we have decided to classify implications of new physics according to the relevant types of new particles, namely new bosons, new fermions and other exotics. We have tried to motivate the presence of these new particles, to report on the current (or expected after the end of the 2012 run) bounds and to discuss the implications for future colliders in terms of this kind of new physics. The main conclusions are that discoveries with LHC8 are possible and well motivated but, if no discovery is produced, any further discovery with LHC14 will most likely require an upgrade in energy or luminosity or a LC for a precise determination of the properties of the new particles. We include a small appendix on issues related to boosted techniques in searches for high scale new physics in current and future colliders.

Primary authors: GROJEAN, Christophe (CERN); SANTIAGO, Jose (Granada University); SAVARD, Pierre (University of Toronto (CA)); WORM, Steven (CERN)