PLANCK 2016
From the Planck Scale to the Electroweak Scale
23-27 May 2016
Valencia, Spain

ID de la contribución : **46** Tipo : **Contributed talk**

Phenomenology of Split Composite Higgs

jueves, 26 de mayo de 2016 11:30 (20)

Long-lived, colour-triplet scalars are a generic prediction of unnatural, or split, composite Higgs models where the spontaneous global-symmetry breaking scale f > 10 TeV and an unbroken SU(5) symmetry is preserved. Since the triplet scalars are pseudo Nambu-Goldstone bosons they are split from the much heavier composite-sector resonances and are the lightest exotic, coloured states. This makes them ideal to search for at colliders. Due to discrete symmetries the triplet scalar decays via a dimension-six term and given the large suppression scale f is often metastable. We show that existing searches for collider-stable R-hadrons from Run-I at the LHC forbid a triplet scalar mass below 845 GeV, whereas with 300 inverse femtobarns at 13 TeV triplet scalar masses up to 1.4 TeV can be discovered. For shorter lifetimes displaced-vertex searches provide a discovery reach of up to 1.8 TeV. In addition we present exclusion and discovery reaches of future hadron colliders as well as indirect limits that arise from modifications of the Higgs couplings.

Primary author(s) : SPRAY, Andrew (Centre for Theoretical Physics of the Universe, Institute for Basic Science, Daejeon)

Presenter(s) : SPRAY, Andrew (Centre for Theoretical Physics of the Universe, Institute for Basic Science, Daejeon)

Clasificación de la sesión : Higgs 3

Clasificación de temáticas : SUSY/Higgs/BSM