

A holographic fourth generation: signals at the LHC

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I present a model with four generations of standard model fermions propagating in a five-dimensional AdS metric. I show that it is possible to break the electroweak symmetry via the condensation of the fourth generation, driven by their interactions with the Kaluza-Klein gauge bosons and by the presence of bulk higher-dimensional operators. This dynamical mechanism results in a heavy composite Higgs, which is highly localized towards the infrared boundary. The localization of the fermions in the five-dimensional bulk naturally leads to the standard model Yukawa couplings via the action of the bulk higher-dimensional operators. I show the spectrum of the model and discuss the electroweak precision constraints. I also study the production and detection of the fourth generation as well as the gluon resonances at the LHC.

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