Contribution ID: **112** Type: **not specified**

Top and Bottom Partners in Composite Higgs Models at the LHC

Top and Bottom partners, predicted by Composite Higgs Models, can be singly produced through the decay of new octet resonances (heavy gluons), which are naturally present in these models whenever partial compositeness is considered. We study in detail this new production mechanism in the Ht\bar{t}, Zb\bar{b} and Hb\bar{b} channels at the LHC in a wide region of the parameter space. The sizably cross sections and very distinctive kinematics allow us to nicely disentangle the signal over the Standard Model background. We thus almost close the theoretical strategy for the study of the composite nature of the top and bottom quarks in this scenario. We also point out that this new mechanism can lead to some of the cleanest LHC signals of new scalar particles present in non minimal models.

Author: RODRÍGUEZ CHALA, Mikael (Universidad de Granada)

Co-authors: CARMONA, Adrián (Institute for Theoretical Physics (Zurich)); SANTIAGO, Jose (Granada University)

Presenter: RODRÍGUEZ CHALA, Mikael (Universidad de Granada)