ICHEP 2016 Chicago



38th INTERNATIONAL CONFERENCE ON HIGH ENERGY PHYSICS

AUGUST 3 - 10, 2016 CHICAGO

Contribution ID: 283 Type: Poster

Making sense of the LHC diboson and diphoton excesses

Saturday 6 August 2016 18:00 (2 hours)

Towards the end of Run-1 data taking, an excess in the diboson as well as eejj channel was announced. During the first round of Run-2 data taking, an excess in diphoton channel has been announced. I consider possible explanations of these excesses in two different BSM scenarios. I demonstrate the feasibility of accommodating the diboson and eejj excess in a Left-Right Symmetric Standard Model. For the diphoton excess, I scrutinise a simplified model with scalar resonance coupling to gluons, photons and fermionic dark matter. I illustrate the monojet constraints on such a simplified model scenario and inspect the possibility of reconsiling the diphoton excess with dark matter constraints.

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Session Classification: Poster Session

Track Classification: Beyond the Standard Model