Contribution ID: **12**   Type: **not specified**

Collider phenomenology of neutral scalars in a flavoured muti-Higgs model

Tuesday 28 June 2022 17:15 (15 minutes)

In this presentation, I shall discuss on collider signatures with a focus on new physics scenarios that are predicted in various classes of multi-Higgs doublet models, with a focus on a recently proposed BGL-like model, enhanced with an abelian U(1) flavour symmetry. A thorough analysis of one of these signatures is conducted in the context of the Large Hadron collider, based on a topology with two charged leptons and 4 jets arising from first/second generation chiral quarks. I discuss how the kinematics of the scalar fields can be used to efficiently separate the signal from the dominant backgrounds and its implications in future runs of the LHC.

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Session Classification: Parallel Session II.1