

Vector-Like fermions and Z' as candidates for New Physics

Thursday, 3 November 2022 09:15 (60)

The pursuit for physics beyond the Standard Model (BSM) follows a twofold path. On the experimental side, a great effort was put in developing research strategies that go beyond the original LHC paradigm based on the missing transverse energy. On the theoretical side, various BSM models can be proposed to address phenomena observed in nature. Among many extensions of the Standard Model, scenarios with vector-like (VL) fermions and Z' have long been enjoying a lot of interest. In this presentation I will talk about two different models with VL-fermions and Z' . In the first model I use the framework of Trans-Planckian Asymptotic-Safety to reduce the number of free parameters of a minimal model with VL-fermions and Z' . In the second model I scan the parameter space of a slightly modified version of the type-II next-to-2HDM. One of the main features of this second model is that masses for SM particles are generated via the so-called Seesaw mechanism.

Presenter(s) : RIZZO, Daniele (National Center for Nuclear Research (NCBJ), Warsaw, Poland)