



Contribution ID: 78

Type: **not specified**

The THDMa revisited

Monday, 15 March 2021 17:30 (20 minutes)

The THDMa is a new physics model that extends the scalar sector of the Standard Model by an additional doublet as well as a pseudoscalar singlet and allows for mixing between all possible scalar states. In the gauge-eigenbasis, the additional pseudoscalar serves as a portal to the dark sector, with a priori any dark matter spins states. The option where dark matter is fermionic is currently one of the standard benchmarks for the experimental collaborations, and several searches at the LHC constrain the corresponding parameter space. However, most current studies constrain regions in parameter space by setting all but 2 of the 12 free parameters to fixed values. I will present results where we allow all parameters to float. We apply all current theoretical and experimental constraints. We identify regions in the parameter space which are still allowed after these have been applied and which might be interesting for an investigation at current and future collider machines.

Time Zone

Europe/Africa/Middle East

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Session Classification: PD1: Theoretical Developments

Track Classification: Physics and Detectors Tracks: PD1: Theoretical Developments