Contribution ID: **145** Type: **Parallel Sessions**

Dark matter Phenomenology in two higgs doublet with complex scalar singlet model

Wednesday 20 October 2021 08:30 (10 minutes)

Extensions of the two higgs doublet models with a singlet scalar can easily accommodate all current experimental constraints and are highly motivated candidates for Beyond Standard Model Physics. It can successfully provide a dark matter candidate, explain baryogenesis and provide gravitational wave signals. In this work, we focus on the dark matter phenomenology of the two higgs doublet model extended with a complex scalar singlet which serves as the dark matter candidate. We study the variations of the dark matter observables, i.e relic density and direct detection cross-section, with respect to the model parameters. We obtain a few representative benchmark points in the light and heavy dark matter mass region. We are also studying possible collider signatures of this model and the possibility of distinguishing this model from other new physics extensions.

Author: DUTTA, Juhi (University of Hamburg)

Co-authors: Prof. MOORTGAT-PICK , Gudrid (DESY and University of Hamburg); SCHREIBER, Merle (University of Hamburg)

Presenter: DUTTA, Juhi (University of Hamburg)

Session Classification: Parallel: BSM

Track Classification: BSM Higgs