

Contribution ID: 111

Type: Oral presentation using Zoom

Impact of light dark matter on Higgs physics

Wednesday, 27 October 2021 10:20 (20 minutes)

We explore a novel possibility that dark matter has a light mass below 1 GeV in a lepton portal dark matter model. There are Yukawa couplings involving dark matter, left-handed leptons and an extra scalar doublet in the model. In the light mass region, dark matter is thermally produced via its annihilation into neutrinos. In order to obtain the correct relic abundance, a neutral scalar is required to be light while charged scalars need to be heavier than the electroweak scale. Such a mass spectrum is realized by adjusting quartic couplings in the scalar potential or introducing an extra singlet scalar. We discuss constraints of the light dark matter from Higgs physics, as well as dark matter searches.

1st preferred time slot for your oral presentation

19:00-21:00 JST (12:00-14:00 CEST, 6:00-8:00 EDT, 3:00-5:00 PDT)

2nd preferred time slot for your oral presentation

13:00-15:00 JST (6:00-8:00 CEST, 0:00-2:00 EDT, 21:00-23:00 PDT)

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Session Classification: F&H-1: Higgs properties & BSM particle production

Track Classification: Parallel sessions: Topical Groups: Session F: Higgs properties