

Probing long-lived particles with SModelS v2

Thursday 25 November 2021 10:20 (20 minutes)

The new developments in SModelS, an automated tool enabling the fast interpretation of simplified model results from the LHC, make it possible to include a wide range of constraints for long-lived particles and treat them at the same footing as the constraints from prompt searches. We present these new features of SModelS v2.x and the new experimental analyses included in its database. To illustrate how they constrain in particular scenarios with long-lived particles, we show results for scalar or fermionic dark matter in the scotogenic model. Finally, we also report on our SModelS/pyhf interface, allowing the usage of full likelihoods as published by ATLAS.

Authors: ALGUERO, Gael; HEISIG, Jan (Université catholique de Louvain (UCL)); KAUR, Charanjit; KRAML, Sabine (LPSC Grenoble); KULKARNI, Suchita (University of Graz); LESSA, Andre (CCNH - Univ. Federal do ABC); REYES-GONZÁLEZ, Humberto (University of Genoa); WALTENBERGER, Wolfgang (Austrian Academy of Sciences (AT)); WONGEL, Alicia (Deutsches Elektronen-Synchrotron (DE))

Presenter: ALGUERO, Gael

Session Classification: Collider

Track Classification: Higgs and colliders