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Constraining new physics with SModelS v2.0: long-lived particles

Monday, 24 May 2021 18:00 (15 minutes)

SModelS is an automatic, public python tool providing a fast reinterpretation of simplified model results from the LHC within any model of new physics respecting a Z_2 symmetry. We present the recently released v2.0 that includes a major revision of the decomposition algorithm. It introduces the particles' decay widths and their quantum numbers as additional parameters of the simplified model topologies. This enables to incorporate a wide range of exotic signatures, such as searches for disappearing and kinked tracks, displaced jets and leptons as well as delayed jets and photons. In total, our database contains simplified models results of over 100 CMS and ATLAS publications including prompt and long-lived particle searches. We demonstrate the impact on various new physics scenarios motivated by dark matter.

Summary

Primary author: Dr HEISIG, Jan (Université catholique de Louvain (UCL))

Co-authors: WALTENBERGER, Wolfgang (Austrian Academy of Sciences (AT)); KRAML, Sabine (LPSC Grenoble); Prof. LESSA, Andre (CCNH - Univ. Federal do ABC); KULKARNI, Suchita (University of Graz); ALGUERO, Gael (LPSC, Grenoble); Dr REYES-GONZÁLEZ, Humberto (University of Genoa); KHOSA, Charanjit; WONGEL, Alicia (Deutsches Elektronen-Synchrotron (DE))

Presenter: Dr HEISIG, Jan (Université catholique de Louvain (UCL))

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