BOOST 2024 - 16th International Workshop on Boosted Object Phenomenology, Reconstruction, Measurements, and Searches at Colliders

Contribution ID: 14

Type: Talk

Boosted H->bb tagging searches

Wednesday, 31 July 2024 09:00 (20 minutes)

Several physics scenarios beyond the Standard Model predict the existence of new particles that can subsequently decay into a pair of Higgs bosons. These include pairs of SM-like Higgs bosons (HH) as well as asymmetric decays into two scalars of different masses (SH). For sufficiently high masses, the scalar S and the Higgs boson are Lorentz-boosted, thus the decay products are produced collimated. In the case where the Higgs bosons (or the scalar S) decay into a pair of bottom quarks, they can be reconstructed and identified inside a large radius jet. In this talk, the latest boosted resonant HH/SH->4b searches by the ATLAS experiment are reported, focusing on results using LHC Run 2 data. The experimental techniques used for the boosted H->bb tagging, and their impact to the analyses sensitivities, are also discussed.

Primary authors: DEIANA, Allison; PARODI, Fabrizio (Istituto Nazionale di Fisica Nucleare)
Presenter: PARODI, Fabrizio (Istituto Nazionale di Fisica Nucleare)
Session Classification: BSM

Track Classification: BSM