



Contribution ID: 181

Type: Oral presentation (remote)

Decoding Higgs Boson Branching Ratios from Event Shape Variables

Tuesday 9 July 2024 10:10 (20 minutes)

In this talk I will discuss a novel strategy [1] for the simultaneous measurement of Higgs-boson branching ratios into gluons and light quarks at a future lepton collider operating in the Higgs-factory mode. The method is based on template fits to global event-shape observables, and in particular fractional energy correlations, thereby exploiting differences in the QCD radiation patterns of quarks and gluons. This is orthogonal to measurements based on traditional tagging methods based mainly on displaced vertices and allows for an extraction of limits on both Higgs boson to gluon- and light quark branching ratios separately. I will also comment on state of the art calculations for the relevant observables based on [2].

[1] Eur.Phys.J.C 84 (2024) 1, 83

[2] arXiv:2403.06929

Apply for poster award

Primary author: REICHELT, Daniel

Presenter: REICHELT, Daniel

Session Classification: Higgs, Electroweak

Track Classification: Physics and Detector: Higgs, Electro-Weak