

# Gluon Jet Sphericity as a New Observable to Probe the CP Structure of Higgs-top Coupling - REMOTE

*Wednesday, November 9, 2022 4:00 PM (15 minutes)*

It is an important task in the SM to constrain the CP property of the Higgs boson, which still exhibits a large uncertainty. We propose a novel observable at the LHC to probe the CP structure of Higgs coupling to the top quark by employing the linear polarization of gluon jets. The linear polarization induces a preferred direction for the azimuthal energy distribution in the gluon jet, which corresponds directly to the CP phase of the Higgs-top coupling. By constructing an infrared safe transverse sphericity observable for the gluon jet, we show that this new approach has a significant power in constraining the CP property of Higgs boson, complementary to the methods that are currently used in the experimental analysis.

## Type of talk

Theory

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