Contribution ID: **56** Type: **not specified**

Probing Flavorful EFTs via VH and WV production at the LHC

Thursday 25 September 2025 14:45 (15 minutes)

Since the discovery of the Higgs boson, no clear footprints of New Physics (NP) have been observed at the LHC. This absence suggests a separation between the scale of NP and the electroweak scale. In this scenario, Effective Field Theories (EFTs) provide a model-independent framework to analyze LHC data and search for indirect signs of beyond-the-Standard-Model effects. In particular, diboson production (WV) and Higgs production in association with a gauge boson (VH) are sensitive to NP, especially in the high-energy tails of kinematic distributions. These energy-enhancement effects enable the extraction of constraints that can be competitive with those from electroweak precision observables, such as those measured at LEP. In this talk, I will discuss how WV and VH processes can probe the Wilson coefficients of Higgs current operators in the Standard Model EFT—specifically, operators that modify the couplings between gauge bosons and fermions—without imposing flavor assumptions. I will also show how these results can be complementary to those from electroweak precision observables and how the High-Luminosity LHC can help clarify current low-energy flavor anomalies.

Primary authors: Mr LEAL, Luighi (Universidade de São Paulo); MARTINES DE AZEVEDO DA SILVA, Matheus (Universidade de São Paulo); Dr SUMENSARI, Olcyr (Laboratoire De Physique Des 2 Infinite Irène Joliot-Curie); Prof. J. P. ÉBOLI, Oscar (Universidade de São Paulo)

Presenter: MARTINES DE AZEVEDO DA SILVA, Matheus (Universidade de São Paulo)

Session Classification: Parallel Sessions Thursday Pheno 2

Track Classification: Particle Phenomenology