Contribution ID: **2** Type: **not specified**

Quantum Entanglement and the Higgs Boson at the LHC

Thursday 24 October 2024 15:15 (40 minutes)

Signatures involving the Higgs boson from quantum corrections and interference effects, can be precisely calculated using Quantum Field Theory (QFT) at the LHC.
These phenomena position the Higgs as a crucial tool for probing the fundamental nature of quantum physics in high-energy physics. In this talk, we will explore how one can understand the quantum formalism by rejecting the LHVM (local hidden variable model) in the high energy regime. This approach serves as a complementary method to previous Bell experiments with photons, offering a novel avenue to test the foundations of quantum physics within the framework of particle physics.

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