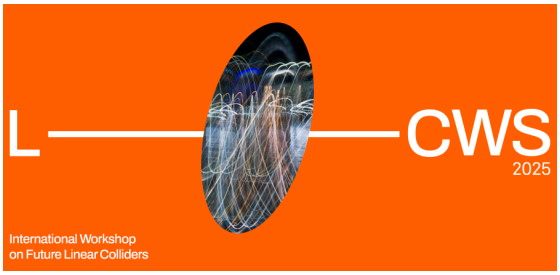

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Future collider constraints on top-quark operators

Thursday 23 October 2025 12:50 (20 minutes)

We present updated constraints on the top-quark sector of the Standard Model Effective Field Theory using data from Tevatron, LEP, and the LHC. Our global fit yields bounds for Wilson coefficients across various two-fermion, four-quark, and two-quark two-lepton operators. We assess these current bounds in relation to the prospects of the high luminosity phase of the Large Hadron Collider and other future lepton colliders, including the significant potential impact of a high-energy muon collider. Additionally, we consider the insights gained from top-quark pair quantum entanglement measurements, which provide complementary sensitivity to relevant SMEFT operators.

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