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## The BSM potential of Momentum-dependent Widths and Propagators

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Incorporating self-energy corrections via Dyson resummation can quantify the deviations from the fixedwidth approximation, to an extent such that one can assess their implications on the myriad of collider observables. In this talk, I shall highlight the BSM reach of momentum-dependent particle widths and propagators of gauge and Higgs bosons, and the top quark using the SMEFT framework. While effects on the Higgs boson are negligible and the W boson shows percent-level deviations in reconstructed transverse mass distributions, the top quark exhibits significant sensitivity near its mass threshold. Future lepton colliders, e.g., electron-positron machines or muon colliders, can offer sensitivity to these effects, enabling a novel avenue of constraining SMEFT Wilson coefficients. Momentum dependencies can indeed provide additional sensitivity at precision-era experiments, enhancing the potential for discovering new physics there.

## Secondary track

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