

Higgs couplings without the Higgs

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Anomalous Higgs couplings precipitate unitarity violation in a multitude of processes. These include, in particular, high multiplicity ($2 \rightarrow$ more than 2) processes involving longitudinal vectors, where unitarity violation manifests in cross-sections that grow too quickly with energy. Using EFT—which provides a transparent and systematic parameterization of the energy growth—we explore how to exploit this energy growth to measure/constrain anomalous Higgs couplings. In certain (important) channels, these high-energy probes turn out to be both complementary and competitive with standard on-shell measurements. Additionally, our exploratory analysis contains many exciting avenues for refinements and improvements for both theorists and experimentalists.

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