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Unitarization effects in EFT predictions of VBS at the LHC

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Effective field theories are an incredibly powerful tool in order to study and understand the true nature of the symmetry breaking sector dynamics of the Standard Model. However, they can suffer from some theoretical problems such as that of unitarity violation. Nevertheless, in order to interpret experimental data correctly a fully unitary prescription is needed. To this purpose, unitarization methods are addressed, but each of them leads to a different (unitary) prediction. Because of this, there is an inherent theoretical uncertainty in the determination of the effective field theory parameters due to the choice of one unitarization scheme.
In this talk, I will present this uncertainty assuming a strongly interacting electroweak symmetry breaking sector, described by the effective electroweak chiral Lagrangian (or Higgs effective field theory). In particular, I focus on the WZ scattering as the main VBS channel to study the sensitivity to new physics at the LHC. Using various well known unitarization methods, I will show the different predictions at subprocess level, considering the full coupled system of helicity amplitudes. Then I will present the current experimental constraints and how the different predictions manifest in the pp collisions at the LHC. Finally, I will show the corresponding 95% C.L. exclusion regions for the most relevant electroweak chiral Lagrangian parameters involved in the WZ scattering depending on the unitarization method applied.

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