Contribution ID: **8** Type: **Poster**

New Physics in Vector Boson Scattering at the LHC

After the discovery of a light Higgs boson, the scattering of electroweak vector bosons (VBS) is even more an eminent search channel for new physics due to the intricate cancellations between gauge and Higgs amplitudes. We will discuss the most general model-independent parameterization for new physics in terms of Standard Model Effective Field Theory (SMEFT), and detail the limitations of this approach regarding validity, applicability, and detectability of operator coefficients. Limits from unitarity of amplitudes and possible unitarization prescriptions will be shown. Beyond the EFT, we will discuss Simplified Models in terms of generic resonances that can show up in the VBS channels. Furthermore, we will discuss new physics in longitudinal as well as transversal vector bosons, and means how to disentangle them.

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Session Classification: Poster session

Track Classification: Electroweak