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Catching Heavy Vector Triplets with the SMEFT: from one-loop matching to phenomenology

Monday 9 May 2022 15:00 (15 minutes)

An important question for both phenomenologists and experimentalists is whether one can put limits on UV model parameters by matching the full theory onto the SMEFT. I will show that this is possible and explore the complementarity between SMEFT and model-specific approaches.
In particular, I will focus on an additional theory uncertainty arising from the matching at one-loop and discuss how this affects the limits set for the Heavy Vector Triplet extension of the Standard Model. I use the SFitter framework to derive limits, taking into account Higgs, diboson and electroweak precision measurements previously implemented, as well as two new resonance searches for VH and VV. I will discuss the impact of those measurements on the fit and the complementarity of our results with direct searches.

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