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Effective field theories for BSM physics

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After runs 1 and 2 at the LHC there seems to be little evidence of new physics at the energy scales the LHC can probe. Given this situation a natural approach to looking for beyond the Standard Model physics is the use of Effective Field Theories (EFTs) which allow us to study decoupled physics (i.e. physics at mass scales beyond the reach of collider experiments) in a systematically improvable manner consistent with the tenets of Quantum Field Theory. I will briefly summarize my work with EFTs, specifically the Standard Model EFT (SMEFT) and a new geometric approach to the SMEFT referred to as the geoSMEFT. I will then briefly explain some open questions I'm interested in exploring with the intention of provoking discussion, especially with experimentalists, about how this work might be interfaced with experiment.

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