

Jet Bundle Geometry of Scalar EFTs

Wednesday, November 6, 2024 3:20 PM (20 minutes)

Geometric formulations of scalar EFTs formulate fields as coordinates on a field space manifold, which provides an alternative method of studying theories by relating physical quantities emerging from the two derivative term to geometric tensors which are invariant under field redefinitions.

Fibre bundles provide us with the tools to extend the formalism to both describe the potential via geometric quantities as well as extending to higher derivative orders via the construction of Jet bundles. As the full Lagrangian becomes possible to describe using a (pseudo-)Riemannian metric all physical quantities become related to geometric quantities.

The talk will introduce the mathematical formalism of fibre bundles showing how higher derivatives can be incorporated via Jet bundles as well as showing the computation of tree level and one loop amplitudes in the fibre bundle. The talk is based on arXiv: 2308.00017 as well as an upcoming work.

Primary track

BSM Higgs physics

Is the speaker a PhD student or post-doc?

Yes - My participation will be fully supported by my research group

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