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Jet Bundle Geometry of Higher Derivative EFTs

Monday 19 June 2023 10:15 (17 minutes)

Recent theory developments showed that the interplay between HEFT and SMEFT can be conveniently studied using differential geometry methods, where non-derivative field redefinitions are interpreted as coordinate changes on a 4D manifold. This approach is typically restricted to the study of the 2-derivative Lagrangian. We introduce a possible strategy to extend the geometric interpretation to terms with 4 or more derivatives by employing the formalism of jet bundles, where field derivatives are treated as independent coordinates on a higher-dimensional manifold.

The talk will give a quick introduction to jet bundles and present preliminary results about the correspondence between metrics on jet bundles and the Lagrangian formulation of a toy EFT.

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yes

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