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Geometry of Effective Field Theories on Functional Manifolds

Monday 19 May 2025 15:15 (15 minutes)

Field redefinitions in effective field theories (EFTs) can involve derivatives, introducing redundancies that cannot be captured by the traditional geometry of field space based solely on two-derivative terms in the Lagrangian. To accommodate these derivative-dependent transformations, we present a geometric framework that extends beyond conventional field space to the functional manifold. Within this setting, we demonstrate that tree-level scattering amplitudes can be constructed from on-shell covariant building blocks. As an example, we show that amplitudes in up-to-two-derivative theories depend solely on the curvature, potential, and their covariant derivatives. Our results provide a step toward a fully geometric formulation of EFTs, potentially offering new tools for organizing and understanding their physical content.

Mini Symposia (Invited Talks Only)

Plenary (Invited talks only)

Authors: COHEN, Tim (CERN); LU, Xiaochuan (University of California, San Diego); LI, Xu-Xiang (University of Utah); Dr ZHANG, Zhengkang (University of Utah)

Presenter: LI, Xu-Xiang (University of Utah)

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