

Effective Field Theory

Effective field theories (EFTs) are an essential tool to simplify complicated physics systems by only including the relevant interactions. They are used in high-energy physics to study certain regimes of Standard Model (SM) physics with high accuracy (e.g. HQET, SCET, chiral perturbation theory) and to explore beyond SM physics in a model-agnostic way, for instance using Standard Model Effective Field Theory (SMEFT). This lecture is an introduction to EFTs in general and beyond SM physics in the SMEFT framework in particular. We will discuss the theoretical basics of (SM)EFT and its phenomenology. Time permitting, we will also discuss EFTs with new light degrees of freedom, for instance for axion-like particles or right-handed neutrinos.