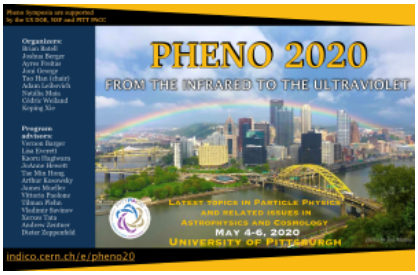

Contribution ID: **1019** Type: **Parallel Talk**

The on-shell viewpoint of effective field theory

Tuesday 5 May 2020 14:45 (15 minutes)

We propose an on-shell viewpoint of the effective field theories (EFT), which treats effective operators as local on-shell amplitudes. As building blocks of an effective theory, both the operator basis and the amplitude basis should contain the same amount of information. In this talk, I will briefly introduce two benefits this viewpoint bring to us. First, we can translate some obvious constraints, like angular momentum conservation, on scattering amplitudes into constraints on operators, by which we find novel selection rules for the operator renormalizations and loop contributions. Second, inspired by studies of local on-shell amplitudes, we are able not only to count, but also to write down a complete basis of Lorentz structures of a given type of operators, which help us develop a method to systematically derive the complete non-redundant operator basis of any model at any dimensions.

Summary

Author: XIAO, Minglei

Co-authors: LI, Haolin (University of Massachusetts Amherst); YU, JiangHao; SHU, Jing (Institute of Theoretical Physics, Chinese Academy of Science); Dr JIANG, Minyuan (ITP, CAS)

Presenter: XIAO, Minglei

Session Classification: Theoretical Developments & Extra Dimensions

Track Classification: Theoretical Developments