

Contribution ID: 119

Type: Oral presentation using Zoom

## Scattering amplitudes in generalized Higgs effective field theory

Thursday, 28 October 2021 11:40 (20 minutes)

The HEFT is the most general effective field theory with non-linearly realized electroweak symmetry, but it cannot treat the production or decay processes of new particles. In the previous work, we extend the HEFT so that it includes the arbitrary number of neutral and charged scalar fields. In some of the BSM models such as composite Higgs models, however, the SM fermion partners are predicted in addition to the new scalar matter fields at low energy region, and in order to treat these additional fermions in a consistent manner, we have to extend the HEFT so that it includes not only new scalars but also these new fermion fields.

In the recent work, we formulate the generalized HEFT including new fermion fields as well as new scalar fields. We calculate scattering amplitudes in a basis-independent manner and find that their high energy behaviors are controlled by the geometrical quantity in the extended target space, such as Riemann curvature tensors.

## 1st preferred time slot for your oral presentation

19:00-21:00 JST (12:00-14:00 CEST, 6:00-8:00 EDT, 3:00-5:00 PDT)

## 2nd preferred time slot for your oral presentation

10:00-12:00 JST (3:00-5:00 CEST, 21:00-23:00 EDT, 18:00-20:00 PDT)

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Session Classification: F-1: Higgs properties

Track Classification: Parallel sessions: Topical Groups: Session I: Electroweak physics