

# Séminaire de physique des particules et de cosmologie

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Mardi 28/01/2020, 16:00

Orme des Merisiers Salle Claude Itzykson, Bât. 774

The Higgs EFT is a black hole

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We consider the question of whether the scalar sector of the Standard Model, and possible deviations from its predicted interactions, are best parametrised by "SMEFT" or "HEFT". Here "SMEFT" means an effective field theory built out of a Higgs doublet, whose components transform linearly under electroweak symmetries; "HEFT" is built out of a singlet Higgs field and three Goldstones upon which symmetry transformations are non-linearly realised. Ultimately, they are just different coordinate choices for a scalar field space manifold. Drawing heavily on the recent literature, we formulate field redefinition invariant (i.e. geometric) criteria on the analyticity and convergence of the lagrangian, to understand when one must and should use a "HEFT" to parametrise the effects of new physics.

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