Contribution ID: **9**   Type: **not specified**

The dimension-8 SMEFT for Higgs and electroweak physics

Wednesday 15 April 2020 15:30 (30 minutes)

In this talk I will discuss how dimension 8 effects can be systematically studied in Higgs and electroweak physics. After presenting a full list of dimension 8 operators that correct these processes, we will discuss how they connect to observables. The effects from these operators can be classified into two categories, (1) those arising from new contributions to vertex structures already present in the dimension-6 lagrangian and (2) those arising from completely new vertex structures that can lead to novel kinematical signatures or final states. We will focus on the former category, i.e. pseudo-observables that can get contributions from both dimension-6 and 8 operators, where it is especially hard to disentangle the dimension 8 contribution form the dominant dimension 6 one. To isolate such dimension-8 effects, we need to test correlations between pseudo-observables that exist at the dimension-6 level. Dimension 8 effects arise as a violation of these correlations. We provide some examples about how well these correlation violations can be measured and how these can translate into bounds on dimension-8 operators.

Presenter: GUPTA, Sandeepan (IPPP, Durham University)