

Cosmological Higgs relaxation without inflation

Wednesday 23 May 2018 16:10 (20 minutes)

The relaxion models propose a new idea to explain the smallness of the Higgs mass. They rely on the scanning of the Higgs mass parameter by a new field, the relaxion, and a back-reaction mechanism that is triggered when Higgs vacuum expectation value has reached the size of the electroweak scale, making the relaxion evolution cease. In the usual relaxion model the scanning happens during an inflationary period. Here we explore the cosmological consequences if the relaxation happens independently of inflation. In this scenario, the stopping mechanism is provided by particle production friction. The parameter space is very different from the usual relaxion scenarios; for instance, the relaxion mass can be as high as $O(100)$ TeV.

Presenter: FONSECA, Nayara (DESY)

Session Classification: Parallel Session on Relaxion/Light bosons