Contribution ID: **187** Type: **not specified**

Portals into Higgs Stability

Thursday 29 September 2022 14:30 (15 minutes)

We address the notorious metastability of the standard model (SM) and promote it to a model building task: What are the new ingredients required to stabilize the SM up to the Planck scale without encountering sub-planckian Landau poles?
We tackle this issue in a less common manner, as the SM is minimally extended by vector-like fermions, while no new scalar fields are introduced.
We chart out the corresponding landscape of Higgs stability, and distinguish between portal mechanisms involving only the gauge interactions of BSM fermions or also new Yukawa interactions with the SM Higgs. Several models allow for vector-like fermions in the TeV-range, which can be searched for at the LHC. For nontrivial flavor structure severe FCNC constraints arise which complement those from stability.

Summary

Primary authors: Prof. HILLER, Gudrun (TU Dortmund); Mr HÖHNE, Tim (TU Dortmund); LITIM, Daniel (U Sussex); STEUDTNER, Tom (TU Dortmund)

Presenter: STEUDTNER, Tom (TU Dortmund)

Session Classification: Parallel Session Thursday

Track Classification: Particle Phenomenology