DESY THEORY WORKSHOP

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27 - 30 September 2022
DESY Hamburg, Germany

DESY.

Contribution ID: **214**　　　　　　　　　　　　　　　　　　Type: **not specified**

The stochastic relaxion

Thursday 29 September 2022 14:15 (15 minutes)

Cosmological relaxation of the electroweak scale provides an elegant solution to the Higgs mass hierarchy problem. In the simplest model, the Higgs mass is scanned during inflation by another scalar field, the relaxion, whose slow-roll dynamics selects a naturally small Higgs vev. In this work we investigate the mechanism in a less conventional regime where the relaxion is subject to large fluctuations during its dynamics. We identify modified stopping conditions for such dynamics of the relaxion and find the new parameter space. In a large region of the parameter space, the relaxion can naturally explain the observed dark matter density in the universe.

Summary

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Session Classification: Parallel Session Thursday Cosmo

Track Classification: Cosmology & Astroparticle Physics