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Dark Matter and Electroweak Phase Transition in the Inert Doublet Model

Wednesday 22 September 2021 16:00 (15 minutes)

In this talk, we will provide a comprehensive analysis of the prospect to realize Dark Matter (DM) and to enhance the Electroweak PhaseTransition (EWPhT) with an Inert Doublet. Taking the latest constraints from collider physics and direct-detection experiments into account, we will investigate the possibility of a strong first-order EWPhT via one or two steps in combination with a significant amount of the measured DM abundance both in the low-mass and in the high-mass regime, exploring also new regions of parameter space. We will find that the low-mass regime leads to a parameter space providing a significant DM abundance as well as to a strong first-order EWPhT without or with an intermediate stage during the EWPhT. On the contrary, the high-mass regime gives rise either to a significant amount of DM or to a strong first-order EWPhT, the latter being an integral part of EW baryogenesis to explain the present baryon-antibaryon asymmetry.

Do you wish to attend the workshop on-site?

yes

Summary

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