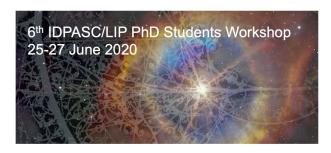6th IDPASC/LIP PhD Students Workshop
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One-loop corrections to Higgs decay to dark matter

Thursday, 25 June 2020 17:15 (40 minutes)

The Standard Model of Particle Physics (SM) is one of the most successful theories in Physics. However, it has failed to explain some observed phenomena as is the case for dark matter. To address this issue, particle physicists turn to models Beyond the Standard Model (BSM). The Next-to-minimal 2-Higgs Doublet Model (N2HDM) is a Standard Model extension that provides phenomenology compatible with the existence of dark matter candidates. From this model we are specially interested in the decay of the Higgs boson to dark matter which could provide a way of detecting dark matter in a particle accelerator. To study this process with high precision we want to calculate the observables to Next-to-leading order (NLO) of perturbation theory, which is achieved by considering the additional one-loop Feynman diagrams for the process.

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