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Probing the supersymmetric inflaton and dark matter link

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In this talk I will present a study on the NUHM2 supersymmetric model where both the cosmic inflation and the observed dark matter abundance can be explained, with a Higgs boson mass in the range favoured by the latest LHC data. The two inflaton candidates
LLe and udd are embedded within the MSSM therefore their decay naturally excites all the relevant degrees of freedom which thermalizes the lightest supersymmetric particle (LSP) during reheating. Many configurations in the NUHM2 parameter space predict the correct relic density for the LSP, the right amplitude and tilt of the power spectrum. We find also that the dark matter interactions with XENON nuclei fall within the projected range for XENON1T. Hence, such a scenario will be significantly constrained by this experiment.

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