

# Fundamental physics in the cosmos: The early, the large and the dark Universe



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## Simplified models for dark matter direct detection at one loop

*Thursday 28 September 2017 14:00 (17 minutes)*

Given the stringent upper limits from direct detection experiments, one possibility is that dark matter scatters with nuclei only at the loop level. In the first part of the talk, I will discuss direct detection signals of simplified models. We impose current limits and analyse how next generation experiments can constrain the dark matter parameter space. In the second part, I analyse the case of a fermion singlet, where neutrino masses can be easily generated at one loop. I will present the results of our study of the phenomenology of the model, including lepton flavour violating processes.

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