## Rencontre de Physique des Particules 2015



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## Dark matter effective field theory at present and future colliders

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The absence of BSM signals at the Large Hadron Collider and the strong cosmological evidence for dark matter (DM) have motivated a fairly model-independent Effective Field Theory (EFT) approach to describe the interactions of DM particles with the Standard Model. This approach is known to be both powerful, thanks to its simplicity, as well as subtle, due to its potential limitations. I will discuss up-to-date constraints on the corresponding effective operators coming from direct DM searches, the LHC and cosmic DM abundance measurements. I will moreover present relevant predictions for the reach of the next LHC run as well as that of a futuristic 100 TeV hadron collider and discuss the validity of the EFT description in the corresponding experimental environments.

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