

Cosmic antideuterons from dark matter and primordial black holes

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Summary

The search for antideuterons in cosmic rays has been proposed as a very promising channel to look for exotic processes taking place in our Galaxy. In particular, both the pair annihilation (or the decay) of WIMPs and the evaporation of primordial black holes could generate a flux of low-energy antideuterons much larger than the expected astrophysical background.

The aim of this talk is to present a detailed investigation of the main features that characterize the antideuteron fluxes produced by such mechanisms. An overview of the principal issues related both to the antideuterons production and to their subsequent propagation through the interstellar medium will be given and the capability of current and future experiments to detect an antideuteron signal coming from WIMPs or from primordial black holes will be discussed.

In addition, an investigation of the properties of the astrophysical background will be presented, with a particular focus on the antideuteron flux that could be generated by primary astrophysical sources, such as Supernova Remnants.

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