

Status of cosmic antinuclei searches

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The precise measurement of cosmic antinuclei is an important means for identifying the nature of dark matter and other beyond-standard-model physics. Recent years have shown that identifying the nature of dark matter with cosmic positrons and antiprotons is challenging and has led to an increased interest in cosmic antideuteron and antihelium searches. Antideuterons and antihelium nuclei may also be generated in dark matter annihilations or decays, offering a potential breakthrough in unexplored phase space for dark matter. This presentation discusses the current status, perspectives, and challenges for cosmic antinuclei searches. It will review the motivation for antinuclei searches, discuss the theoretical and experimental uncertainties of antinuclei production and propagation in our Galaxy, as well as summarize the experimental status.

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