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Searching for gravitational-wave signals from axions

Thursday 5 November 2020 16:00 (20 minutes)

Axions are well-motivated theoretical particles that are also dark matter candidates. They can form enormous clouds around black holes, and then annihilate to produce a long-lived, slowly-evolving continuous gravitational-wave signal. This signal is potentially detectable using the current generation of gravitationalwave interferometers, and a non-detection can disfavor the existence of axions in certain mass ranges. I will discuss the expected gravitational-wave signal from axion clouds around the black holes in the Galaxy, and the prospects for detecting the signal using standard searches for continuous gravitational waves.

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