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Novel probes of dark matter with continuous gravitational waves

The third observing run of advanced LIGO, Virgo and KAGRA brought unprecedented sensitivity towards a variety of quasi-monochromatic, persistent gravitational-wave signals. Continuous waves allow us to probe not just the canonical asymmetrically rotating neutron stars, but also different forms of dark matter, thus showing the wide-ranging astrophysical implications of using a relatively simple signal model. In this talk, I will summarize recent results from searches for dark matter in the form of asteroid-mass primordial black holes, dark matter clouds that could form around rotating black holes, and even dark matter that could interact with the detectors themselves.

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