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Sensitivity forecasts for gravitational-wave detectors to dark matter decaying into gravitons

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Abstract

Dark matter may not be perfectly stable, and its decay could generate distinctive gravitational-wave signatures. In this work, we present model-independent predictions for the stochastic gravitational-wave background arising from the decay of ultralight dark matter into gravitons. Within this framework, we forecast the sensitivity reach of current and forthcoming gravitational-wave detectors to such signals.

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