



Ultralight New Physics: From Astrophysical Frontiers to Laboratory Discoveries.

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I will discuss ultralight new physics as a possible way to explain some of the puzzles in modern particle physics and cosmology. After a brief introduction on ultralight new physics and their theoretical motivations, I will discuss several ways to experimentally and observationally confirm or falsify ultralight new physics. With recent advancements on precision astrophysics (pulsar timing array, astrometry, etc) and quantum sensors (atomic clock, gravity wave detectors), I will show that a wide variety of ultralight new physics can be tested in near future. I will conclude with several potential future directions and challenges for ultralight new physics searches.



Wave dark matter



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