

The Fluctuating Spacetime of Dark Matter

What if dark matter only interacts with the visible sector through gravity? Long considered a grim scenario where its properties (e.g., spin and mass) might remain elusive, it has recently been recognized that bosonic dark matter exhibits oscillating components in its stress-energy tensor. Remarkably, these can induce sizable, time-dependent perturbations to the spacetime metric, reminiscent of gravitational waves, offering promising avenues for direct detection. This talk will focus on a new method to gravitationally detect dark matter using astrometry – the precise measurement of positions of distant astrophysical sources.

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