

JOINT TUFTS/MIT COSMOLOGY SEMINAR

Wave-optics limit of the stochastic gravitational wave background

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The stochastic gravitational waves background is a rich resource of cosmological information, encoded both in its source statistics and its anisotropies. During their journey, the gravitational waves constituting it encounter cosmic structures, which are able to modify the observed signal.

The type of distortion depends on the ratio between the wavelength of the wave and the matter overdensities typical length-scale. When these two scales are similar, interference and diffraction effects may arise, possibly boosting the signal's amplitude or inducing a non-trivial polarization pattern. In this talk I will present my results about the wave-optics limit of the stochastic gravitational wave background, treating with particular care its polarization content, and describe how they can be used to gain information about the matter content of the Universe.

Tuesday, October 17, 2023, 2:30 pm
Cosman Seminar Room
Center for Theoretical Physics
Building 6C, Room 6C-442
Massachusetts Institute of Technology