

Cosmic Microwave Background anisotropies and primordial gravitational waves

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In many viable theoretical models primordial gravitational waves are predicted as a consequence of the early evolution of the Universe. Such waves will unavoidably leave an imprint on the Cosmic Microwave Background (CMB) anisotropies, which would be particularly noticeable in the so-called B-mode polarization. The precise measurements of the CMB polarization anisotropies are therefore one of the most promising ways to constrain the amplitude of the primordial gravitational waves and thus differentiate between different competing models of the early Universe.

In this talk I will briefly review the physics of the CMB anisotropies, present the current status of the experimental effort in this field and describe the major hurdles which need to be overcome before a reliable and precise measurement can be delivered.

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