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Induced gravitational waves: the effect of first order tensor perturbations

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Gravitational waves provide a new observational tool to study the universe. Second-order cosmological perturbation theory allows to study gravitational waves sourced by terms quadratic in first order quantities. For example, so-called scalar induced gravitational waves are sourced by first order scalar fluctuations and have been studied extensively. In this presentation I discuss the implications and possibilities of including tensor fluctuations at first order in the source term. I will show how the first order tensor fluctuations change the spectral energy density of the induced waves, particularly on small scales, and will discuss implications for their detectability and observational constraints for models of inflation.

Presenter: PICARD, Raphael (Queen Mary University London)