

Gravitational waves induced by scalar-tensor mixing

Tuesday, 23 July 2024 15:00 (25 minutes)

This talk explores second-order gravitational waves (GWs) originating from scalar-tensor perturbation interactions during the radiation-dominated phase of the Universe. We investigate the unique features and detectability of these GWs compared to the scalar-induced ones. Unlike scalar-scalar induced GWs, scalar-tensor induced GWs lack resonances or logarithmic running in the low frequency spectrum with peaked primordial spectra. However, they exhibit inheritance of primordial parity violations from tensor modes, particularly in the ultraviolet (UV) region due to chirality in primordial GWs. We also address potential divergences in our GWs analysis and explore solutions. This study significantly contributes to understanding GWs in the early Universe, with implications for cosmology and GWs detection.

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Session Classification: Presentations