

Graviton-photon oscillation beyond GR

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The excitation of gravitational waves due to the propagation of electromagnetic waves in an electromagnetic field and back again is a well-known prediction of GR. After interpreting the propagation of gravitational waves in the context of alternative theories of gravity as if they were moving through a diagravitational medium, we will see that the magnitude of graviton-photon mixing is modified by the refractive index of this medium. The results suggest that graviton-photon oscillation produced by primordial gravitational waves crossing cosmic magnetic fields may lead to footprints of modifications of GR in the sky.

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