

Graviton to photon conversion in external magnetic field in FLRW universe

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In the work gravitational wave conversion to electromagnetic wave during propagation in external magnetic field is considered for expanding FLRW universe. Initially, only tensor mode is present in the problem and then it propagates in the medium with a magnetic field - cosmological magnetic field for example. System of differential equations are derived for tensor and scalar modes of gravitational perturbations and for two polarizations of electromagnetic wave. After that the system is analyzed mathematically and from the physical point of view. In the end the author makes a conclusion about possible influence of the considered phenomenon on relic gravitational wave spectra.

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Session Classification: In-person poster session & welcome drinks