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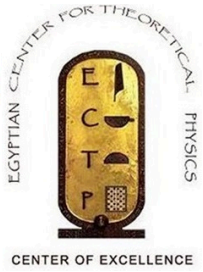

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Gravitational slip parameter and Gravitational Waves in Modified Gravity theories

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Despite the discovery of late-time accelerated expansion of the universe, we still have no clue about the physics behind that. Therefore, the answer might be lied in Modified Gravity theories. A modification in geometric structure of space-time causes noticeable differences in gravitational waves equation compared to the known form of gravitational waves in general relativity.
Various gravity theories have two general phenomenological effects at the level of linear and scalar perturbation:
1. A modification of the strength of gravity at large scales
2. An alteration of the weak gravitational lensing effect
Measurement of the two aforementioned effects allows us to obtain gravitational slip parameter η; which is the ratio of two scalar gravitational potentials $\eta=\Phi/\Psi$.
The existence of gravitational slip parameter ($\eta\neq1$) in the presence of perfect fluid matter is a clue of a modification in gravity. In addition, this parameter is a model independent quantity which distinguishes the groups of gravity models. In this research, we study the gravitational slip parameter and gravitational waves equation in the context of theories including torsion, such as Einstein-Cartan theory.

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