

Contributed Talk

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Title: Surfing a (dark) gravitational wave

Abstract: Gravitational waves are solutions of General Relativity and have been directly detected in recent years. Notwithstanding, alternative theories of gravity also present such solutions with some new interesting features. In general, in alternative metric theories of gravity they may present up to six polarisation states. However, when matter is included, some additional features arise. Hence, in the context of non-minimal matter-curvature coupling theories these issues need to be addressed. We shall present the results of such analysis, both from the usual linearisation process and from the Newman-Penrose formalism. Some comments on different gravity models will be presented, thus giving some insights on how to surf dark gravitational waves!