

Seminário/Talk

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Sala de Reuniões do Departamento de Matemática

Non-local Gauss-Bonnet Gravity with the inverse d'Alembertian

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Resumo/Abstract:

There are two basic motivations which lead cosmologists to modify gravity. The first one is an attempt to connect gravity with quantum physics, at least in a perturbative way, by including quantum correction terms to Einstein's equations. The second is an interest to describe the Universe evolution in a more natural way, without the dark energy and the dark matter components, which turn out to be avoidable in the modified models.

The cosmological dynamics of a non-locally corrected gravity theory, involving a power of the inverse d'Alembertian, is investigated. Casting the dynamical equations into local form, the fixed points of the models are derived, as well as corresponding de Sitter and power-law solutions. We also derive the reconstruction procedure, find conditions on the model parameters that are sufficient for the existence of de Sitter or power-law solutions and obtain these solutions explicitly.

The talk is based on the recent papers E. Elizalde, S.D. Odintsov, E.O. Pozdeeva, S.Yu. Vernov, arXiv:1805.10810 and E. Elizalde, E.O. Pozdeeva, S.Yu. Vernov, arXiv:1909.09452.