

We present a formalism to study screening mechanisms in modified theories of gravity via perturbative methods in different cosmological scenarios. We consider Einstein frame posed theories that are recast as Jordan frame theories, where a known formalism is employed, though the resulting non-linearities of the Klein-Gordon equation acquire an explicit coupling between matter and the scalar field, which is not present in Jordan frame theories. The obtained growth functions are then separated in screening and non-screened contributions to facilitate its analysis. This allows us to compare several theoretical models and to recognize patterns which can be used to differentiate models and their screening mechanisms. In particular, we find anti-screening features in the Symmetron model. In opposition, chameleon type theories, both in the Jordan and in the Einstein frame, always present a screening behaviour. Up to third order in perturbation, we find no anti-screening behaviour in theories with a Vainshtein mechanism, such as the DGP and the cubic Galileon.