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Mr. SALTAS, Ippocratis (University of Sussex): Anisotropic stress and stability in modified gravity models

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The existence of the effective anisotropic stress at late times, which in this case has a purely geometrical origin, seems to be a characteristic of higher order gravity models, and its detection will be a smoking gun for departures from General Relativity, for example in future weak lensing surveys. I will discuss and investigate the possibility of the existence of modified gravity models that would be able to “hide” from weak lensing experiments, by giving a GR-like behavior for the lensing potentials. I will then show that this is always impossible in the context modified gravity models (such as $f(R)$, $R + f(G)$ or $f(R,G)$) since as it turns out to be, effective anisotropic stress is strongly linked to the actual stability of these models, and its suppression can lead to singularities. The latter fact prevents us of making the effective anisotropic stress arbitrarily small, putting this way bounds on its lower value.

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