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## **Anisotropic stress and (background) stability of modified gravity models**

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The existence of an 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 (GR), for example in future weak lensing surveys. However, no departure from GR has been as yet observed. In my talk, I will discuss and investigate the possibility of constructing a class of modified gravity models of the general  $f(R,G)$  type, able to “hide” from weak lensing experiments by giving a GR-like behavior for the lensing potentials, i.e having a zero anisotropic stress. For both a de Sitter and matter background I will identify models with the desired property, and will discuss the difficulties arising from such constructions, such as instabilities and extreme fine tuning. In particular, as I will show, models with zero anisotropic stress in a de Sitter spacetime, suffer from a background singularity, that makes it impossible to reach de Sitter evolution. Motivated by the latter fact, I will proceed to discuss the link between the effective anisotropic stress and the (background) stability of the model as well as the presence of extra degrees of freedom, which seems to be a general feature of higher order gravity models.

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