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On the modified gravity and common nature of dark sector

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We show that (Eur Phys J C, 2018), the gravity can be considered as defined not by one but two fundamental constants which enables us to explain quantitatively both dark energy (the cosmological constant) in GR equations and dark matter in weak-field limit simultaneously. Then, in order to throw more light on the nature of the constants appearing here, we generalize the Newton theorem on the 'sphere-point mass' equivalency to arbitrary dimensions. We also turn into gravitational lensing, where this additional term predict a critical value for the involved weak-field parameter. If this value will be established at future observations, this will mark the first discrepancy with GR of the conventional weak-field limit, directly linked to the nature of the dark sector of the Universe.

Summary

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