

## Poster: A model-independent test of gravity from the Weyl potential evolution

To test the vast number of modified gravity models, a systematic and comprehensive approach is necessary when analysing the data from cosmological surveys. The novel observable  $\hat{J}$ , capturing the evolution of the combined gravitational potential  $\Psi + \Phi$ , provides a powerful and model-independent test of gravity. Recently, we have performed the first measurement of this observable from Dark Energy Survey data (C. Bonvin, I. Tutusaus & N. Grimm, arXiv:2312.06434), combining galaxy-galaxy lensing and galaxy clustering data. Interestingly, we find a tension with the prediction of the standard cosmological model, reaching 3.1 sigma at  $z=0.48$ . In my lightning talk, I will present this novel observable and demonstrate its remarkable capacity to test gravity in a model-independent manner.

**Would you be interested in presenting a poster? (this will not impact the decision on your talk)**

yes

**Primary authors:** GRIMM, Nastassia; Dr TUTUSAUS, Isaac; Dr BONVIN, Camille

**Presenter:** GRIMM, Nastassia

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