



Contribution ID: 11

Type: **not specified**

## Testing modified gravity with cosmic voids

*Monday 22 October 2018 18:00 (30 minutes)*

Modifications to General Relativity on cosmological scales offer an intriguing explanation for the accelerated expansion of the Universe. The modifications to gravity are sourced by an extra scalar field, which gives rise to a fifth force that enhances structure formation. The additional force is negligible in high density regions, however it can attain maximum values in underdense regions and thus voids are a very promising venue to test modified gravity models. I will present the physics of voids in these theories and will discuss which voids observables are the most promising for testing the models. The fifth forces enhances the outflow of mass from voids and thus voids in modified gravity models are more underdense than their General Relativity analogues. This is manifested in the weak lensing signal by voids, which is larger in models with a fifth force. Such deviations will be measured by upcoming lensing surveys such as Euclid and LSST, and provide a new avenue for testing modified gravity theories.

**Presenter:** CAUTUN, Marius (Institute for Computational Cosmology, Durham University )

**Session Classification:** Afternoon session