

Numerical simulations of galaxy clusters in dark energy cosmologies: c-M relation

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Abstract

Quintessence dark energy is a viable alternative to the Λ CDM paradigm. In the first part of the talk I will discuss different dark energy cosmologies, focusing in particular on extended quintessence models. I will introduce the numerical simulations of the different dark energy cosmologies used to investigate the concentration-mass (c-M) relation in galaxy clusters. All these models are normalized in order to match CMB data.

In the second part of the talk, I will describe the c-M relation in the Λ CDM model, comparing the complete set of clusters and groups to subsamples of objects at different level of relaxation. Relaxed objects have a higher normalization, a shallower slope and a smaller intrinsic scatter with respect to the complete sample. Finally, I will extend the discussion to the impact of different dark energy models on the c-M relation.