

## Clusters for Cosmology

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The properties of clusters are known to provide critical information of cosmological relevance. I will discuss the various observational probes on clusters and how physical models of clusters can be built based on simple scaling laws. I will show how the standard predictions of these models within the concordance picture conflict with present day observations, leading to the *cluster conundrum*: x-ray temperature distribution of clusters at different redshift conflicts with standard scaling expectations, SZ clusters counts as obtained by PLANCK lead to cosmological parameters in tension with those obtained from the CMB fluctuations. Solutions to evade this problem will be discussed as well as ways to progress on this issue.

### *References*

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*Frontiers of Fundamental Physics 14 - FFP14,*

*15-18 July 2014*

*Aix Marseille University (AMU) Saint-Charles Campus, Marseille*

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