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Neutrino masses from Large Scale Structures - including theoretical errors

Friday, 19 July 2013 17:00 (45 minutes)

I will present forecasts for the accuracy of determining the parameters of a minimal LCDM and the total neutrino mass for a Euclid-like survey. To include as much information as possible, and use the midly non-linear scales in a meaningful way, I will present our method of including theoretical errors.
Two sets of errors are considered: (i) one to account for uncertainties in the modelling of the effect of neutrinos on the non-linear galaxy power spectrum and (ii) to parametrize the overall residual uncertainties in modelling the non-linear galaxy power spectrum at small scales. I will discuss how the inclusion of these errors impact the error on Mnu by comparing different ansatz, and I will also mention the effect of taking into account data from smaller scales considering our current understanding of non-linearities.
I will also discuss how this method can be extended to other probes to have a reliable estimate of the current and achievable sensitivity to the total neutrino mass.

Primary author: AUDREN, Benjamin (EPFL Lausanne)

Presenter: AUDREN, Benjamin (EPFL Lausanne)

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