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Type: **Presentation**

Invited Talk: Constraints on dark matter coldness and neutrinos from intergalactic space

Tuesday 24 June 2014 11:00 (30 minutes)

I will review the constraints that can be placed on the coldness of cold dark matter and total neutrino mass by using the Lyman-alpha forest, which is the main manifestation of the intergalactic medium. The intergalactic medium cosmic web probes mildly non-linear scales of the matter distribution at redshifts $z=2-6$, in a crucial phase of the formation of cosmic structures. I will describe how state-of-the-art data, from Sloan Digital Sky Survey and high resolution spectroscopy, can be used together with high-resolution hydro dynamic simulations to: i) infer lower limits on the mass of a warm dark matter thermal relic or sterile neutrino; ii) infer upper limits on the total mass of active neutrinos.

Presenter: VIEL, matteo

Session Classification: Plenary Talks