ABSTRACT ORAL CONTRIBUTION

COSMOLOGY WITH THE COSMIC WEB

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The cosmic web is one of the most striking morphological features of the Universe on large scales. It holds cosmological information and also influences the evolution of galaxies within. In this talk I will present different algorithms that can be used to trace the cosmic web both in simulations and observations. I will show three different applications of this cosmic web characterization. First, a general study of dark matter halo shape, velocity and spin alignment with the cosmic web. Second, the study of the place of the Local Group in the cosmic web; a necessary step to understand the seemingly atypical kinematic configuration of the Milky Way, M31 and their satellites. Third, the usage of the cosmic web as a tool to constrain cosmological parameters. I will close by showing prospects about future surveys that will map the cosmic web on large volumes with unprecedented accuracy, focusing on the Dark Energy Spectroscopic Instrument (DESI).

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