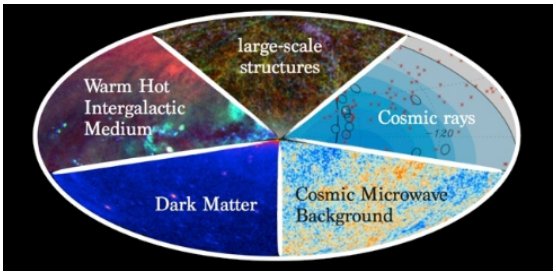

Contribution ID: **49** Type: **not specified**

Anisotropic Universe unveiled with new galaxy catalogs

Tuesday, 12 April 2016 12:15 (20 minutes)

Various cosmological studies require wide-angle galaxy catalogs with 3-dimensional information on source positions. Such datasets, when covering a significant fraction of the sky, are particularly useful for cross-correlation techniques allowing to detect signals buried under the noise in auto-correlations. I will present two recently compiled photometric redshift catalogs covering most of the extragalactic sky, which give access to unprecedented angular scales up to redshifts of z˜0.4. The two datasets are: 2MASS Photometric Redshift catalog (2MPZ) of 1 million galaxies on 90% of the sky at a median redshift z=0.07, and WISE x SuperCOSMOS catalog of 20 million galaxies on 70% of the sky at a median redshift z=0.2. Their redshift accuracy (respectively dz=0.013 and dz=0.033) is sufficient for the tomographic approach in cosmological correlations, and the large fraction of sky covered enhances the signal-to-noise of such studies. I will discuss some of the applications of the two datasets, including a cross-correlation with the Fermi gamma-ray background for constraints on dark matter annihilation and decay (in collaboration with A Cuoco). Finally I will present possibilities of reaching for greater depths on large angular scales thanks to combining already available and forthcoming datasets such as from WISE, VHS, KiDS, etc.

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