

Bridging Cosmology with Astroparticle Physics via Gamma-gamma Interactions: Prospects for Forthcoming and Future Instrumentation

The seminar will discuss the relation between the relevant astrophysical topic about the diffuse background radiations (EBL) and the astroparticle effects of interaction between VHE and low-energy EBL photons. We will argue that critical information will be achieved from such relation on both the astrophysical/cosmological side and the physics one.

After a review on the EBL significance and measurement attempts, we will expand to discuss the currently missing part of it, the long-wavelength far-infrared component, and why it will never be directly measured. This still covers a large, even dominant wavelength interval from few to few hundreds microns.

Opportunities for at least constraining, or even indirectly measuring it via the gamma-gamma effect will be discussed, with reference to forthcoming and future Cherenkov telescope instrumentation sensitive to the very high energy side. As an aside, tests of LIV or ALP effects will be briefly mentioned.