

Talk at Splinter Meeting

Splinter E

PROBING THE EXTRA-GALACTIC BACKGROUND LIGHT WITH  
GAMMA-RAY OBSERVATIONS

D. Horns

*University of Hamburg*

The extra-galactic background light is formed by the accumulated emission of stars since the epoch of re-ionization. Additional contributions may exist and can be probed once the density of isotropic photons in the optical to mid-infrared can be firmly established. However, local sources of emission from inter-planetary space as well as from the inter-stellar medium and galactic objects out-shine the faint background light. Gamma-ray spectroscopy of active galactic nuclei in the band from 100 GeV to 30 TeV can be used to constrain or even measure the amount of background light via the characteristic imprint of energy-dependent absorption through pair-production processes. Interestingly, the absorption appears to be not-consistent with the expectation and can be interpreted by processes that modify the pair-production process. A status and recent updates will be presented.