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HAWC constraints on the CIB MICHAEL NEWBOLD, University of Utah, HAWC COLLABORATION — The Cosmic Infrared Background (CIB) is a prominent component of the Extra-galactic Background Light (EBL) that includes wavelengths from 5 mum to 1 mm. Most of the light is produced by stellar emission that is absorbed and reemitted by dust. As such the CIB traces stellar and galactic evolution from the time of reionization until the present. Attenuation of TeV gamma-ray spectra from extra-galactic blazars offers an alternative method of constraining the CIB density that is complementary to direct measurements and to estimation through galaxy counts. Using Fermi-LAT observations at MeV-GeV energies as a starting point, we investigate the impact of EBL attenuation on the TeV spectra of Markarian 421 and 501, using three years of TeV observations from the High Altitude Water Cherenkov Observatory (HAWC). We explore the effects of the attenuation using the EBL models of Franceschini and Gilmore, modified by a constant multiplier. A best fit value of attenuation based upon this constant is then used to constrain the EBL density. This talk will compare the HAWC CIB energy density limits with recent estimates by other TeV observatories.

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