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Probing the EBL near IR region with HAWC MATEO FERNANDEZ ALONSO, Pennsylvania State University, HAWC COLLABORATION — The extragalactic background light (EBL) is comprised of all the radiation emitted by nuclear and accretion processes since the epoch of recombination. Direct measurements of the EBL in the near-IR to mid-IR waveband are extremely difficult due, mainly, to the zodiacal light foreground. Instead, gamma-ray astronomy offers the possibility to indirectly set limits to the EBL by studying the effects of gamma-ray absorption in the spectra of distant blazars in the very high energy range (VHE:¿100 GeV). HAWC is a water Cherenkov observatory that can detect extragalactic gamma rays significantly up to 10 TeV, making it one of the few instruments sensitive to gamma rays in the multi-TeV range. This offers the opportunity to probe the EBL in the near IR region: $\lambda = 5$ μm - 15 μm. In this study, we assume an intrinsic spectrum as the extrapolation of the Fermi-LAT GeV spectrum and derive a large number of absorbed spectra for different randomly generated EBL model shapes. We then calculate confidence bands in the EBL intensity space by comparing and testing the agreement between the absorbed spectra and HAWC data.

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