

Conference: The Cosmic Kaleidoscope
Location: Kruger Park, South Africa
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Title: **Defining the EBL and Gamma-Ray Absorption**

Presenter: **Flody Stecker**

Abstract:

We calculate the intensity and photon spectrum of the intergalactic background light (IBL) as a function of redshift using an approach based on observational data obtained in many different wavelength bands from local to deep galaxy surveys. Our empirically based approach allows us, for the first time, to obtain a completely model independent determination of the IBL and to quantify its uncertainties. Using our results on the IBL, we then place 68% confidence upper and lower limits on the opacity of the universe to gamma-rays, independent of previous constraints that were obtained by making theoretical assumptions. We then compare our results with measurements of the extragalactic background light and upper limits obtained from observations made by the Fermi Gamma-ray Space Telescope.