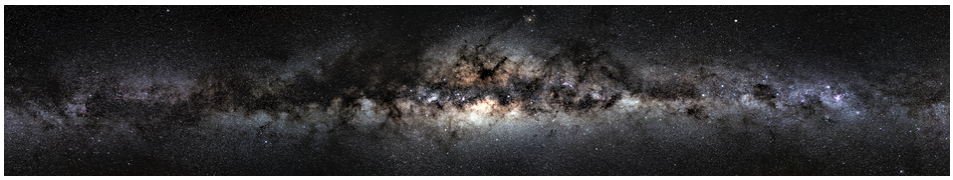

Contribution ID: **43** Type: **Oral**

A Measurement of Small-scale Structure with Hubble Legacy Fields

Tuesday, 7 December 2021 11:20 (18 minutes)

I will describe a new measurement of the small-scale matter power spectrum using UV luminosity-functions (UVLFs) from the Hubble Space Telescope. These data trace the abundance of the first galaxies forming during the epoch of reionization. Since the first galaxies were much less massive than their counterparts today, they provide us with a handle on the clustering of dark matter at smaller scales. I will present the public code GALLUMI, which is built to efficiently marginalize over astrophysical uncertainties and obtain cosmological constraints. Our analysis is able to measure small-scale matter fluctuations at $k = 0.5 - 10\mathrm{Mpc}^{-1}$ and $z = 4 - 10$ to roughly 30\% precision. This measurement sheds light onto the nature of dark matter in a currently uncharted range of scales and redshifts.

Primary authors: BLAS, Diego; MUNOZ, Julian B. (Harvard-Smithsonian Center for Astrophysics); SABTI, Nash

Presenter: MUNOZ, Julian B. (Harvard-Smithsonian Center for Astrophysics)

Session Classification: Parallel 1: Axions and Other Dark Matter Particles