Implications of the ISO LWS Spectrum of the Prototypical Ultraluminous Galaxy Arp 220

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Abstract

We present a low resolution (R = $\lambda/\Delta\lambda \sim 200$) far-infrared (43-197 μm) spectrum of the ultraluminous galaxy Arp 220 obtained from deep, full range scans using the Long Wavelength Spectrometer (LWS) aboard the Infrared Space Observatory (ISO). The spectrum is vastly different from the spectra of less luminous IR bright galaxies: the fine-structure lines that are typical of IR bright galaxies are weak or absent and the spectrum is dominated by absorption lines of OH, H_2O, CH, NH_3 and [O I]. We present our developing interpretation of the far-infrared spectroscopy and the continuum distribution and discuss the implications for starburst versus AGN models.