

Abstract

The dust continuum properties of 127 zGAL sources and their evolution with redshift

D.Ismail¹, A. Beelen¹, S. Berta², V. Buat¹ and z-GAL Team

¹ Aix-Marseille Université, CNRS and CNES, Laboratoire d'Astrophysique de Marseille, 38 Rue Frédéric Joliot-Curie, 13388 Marseille, France

² Institut de Radioastronomie Millimétrique (IRAM), 300 Rue de la Piscine, 38400 Saint-Martin-d'Hères, France

We present the dust continuum properties of 127 high-redshift galaxies of z-GAL, a NOEMA Large Program. The sample contains the brightest dusty star-forming galaxies selected from the Herschel deep fields catalog with a redshift range between 1 and 5. All sources have observations made with NOEMA covering the 2mm & 3mm wavebands. In total, these galaxies have flux densities covering the wavelength range between 250 microns to 3 mm that allows us to investigate the cold dust and constrain its properties.

We use the classical modified blackbody in both the general emissivity and the simplified optically thin case, both corrected for cosmic microwave background effects. Thanks to the excellent coverage of the mm continuum emission with NOEMA we are able to measure dust emissivity indexes, dust temperatures, as well as dust luminosities and masses, all these quantities being essential to better understand the optical dust properties and the hidden stellar activity of these galaxies. We will show that dust temperatures and masses are dependent on the model assumed.