

Seminarium Astrofizyczne

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Maciej Koprowski

(Institute of Astronomy, Faculty of Physics, Astronomy and Informatics, Nicolaus Copernicus University)

Dust attenuation at high-redshift galaxies

One of the most important observables in the Universe is the Star Formation Rate Density (SFRD) and its evolution with redshift. Initial results from ALMA, however, indicated that the dust attenuation experienced by high-redshift ($z > 2$) star-forming galaxies may be fundamentally different from that experienced by their low-redshift counterparts. If true, this could have important implications for our determination of the cosmic SFRD and our ability to infer the physical properties of high-redshift galaxies in general. In this talk I will focus on three recent papers. One aims to directly determine the time evolution of the SFRD out to redshifts as high as 5. Second paper uses a sample of 1000's Lyman-break galaxies (LBGs) to provide an indirect measurement of the dust curve at redshifts $z=3-5$ via the so-called infrared excess ($IRX=L_{IR}/L_{UV}$). The third paper exploits recent ALMA observations of the star-forming galaxies in order to identify the reasons behind many of them being inconsistent with the local dust relations. In contrast to some of the recent results in the literature, these studies indicate that the dust attenuation experienced by star-forming galaxies hasn't evolved significantly over the last 12.5 Gyr.

Serdecznie zapraszam,
Agnieszka Majczyna