

R41a Submillimetre properties of BzKs, DRGs and EROs in SHADES/SXDF

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We study the submillimetre (submm) properties of the following NIR-selected massive galaxies at high redshifts: BzK-selected star-forming galaxies (BzKs), distant red galaxies (DRGs) and extremely red objects (EROs). Partial overlap of SIRIUS/NIR images and the SCUBA Half Degree Extragalactic Survey (SHADES) allows us to detect 6 NIR-selected galaxies. Four submm-detected galaxies out of six are found to be detected both at 24 micron and in radio (1.4 GHz), and therefore confirmed as genuine submm-bright galaxies. We identify two submm-bright NIR-selected galaxies are the BzK-DRG-ERO overlapping population. Although this overlapping population is rare, about 12 % of this population could be submm galaxies. With a stacking analysis, we detected the 850-micron flux of submm-faint BzKs and EROs in our SCUBA maps. While the contribution from BzKs at $z \sim 2$ to submm background is about 10 – 15 % and similar to that from EROs typically at $z \sim 1$, BzKs have a higher fraction (~ 30 %) of flux in resolved sources than EROs do. Therefore, submm flux of BzKs seems to be biased high. From the SED fitting using an evolutionary model of starbursts with radiative transfer, submm-bright NIR-selected galaxies, mostly BzKs, are found to have the stellar mass of $\gtrsim 5 \times 10^{10} M_{\odot}$ with the bolometric luminosity of $\gtrsim 3 \times 10^{12} L_{\odot}$. On the other hand, an average SED of submm-faint BzKs indicates the typical stellar mass of $\lesssim 6 \times 10^{10} M_{\odot}$ and therefore less massive.