

A06b **Wide-field study of galaxies at $z=1-2$ with the optical (Subaru/Suprime-Cam) and NIR (UKIDSS DXS) data on the Lockman Hole field**

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We will report on our wide-field study of galaxies at $z=1-2$ using the optical (Subaru/Suprime-Cam) and NIR (UKIDSS DXS) data on the Lockman Hole (LH) field. In 2004-2006, we performed B- and i'-bands observations with Suprime-Cam. The data cover an area of 4 (4.5) square degrees by 15 (18) telescope pointings in the B (i') band, respectively, which comprises ~ 50 % of the LH field to be observed in the UKIDSS DXS. The J and K images from UKIDSS DXS are so far available in the DR2 on the 0.8 sq. degrees, where archival data of Suprime-Cam in the R and z' bands are also available. Using these data, we extract high- z galaxy candidates with the BzK technique and photometric redshift estimation from the BRizJK data. We emphasize that these wide-field data are best suitable for searching galaxy clusters at $z=1-2$, where only a handful of them have actually been confirmed. We are investigating environmental dependence of photometric properties of galaxies such as the color bimodality and will show some preliminary results in this contribution. We are also developing a similar technique to BzK using BiK photometry, which will be available soon over the 4-4.5 square degrees area with the Suprime-Cam data, aiming eventually to study environmental dependence of galaxy properties not only from photometry but also from spectroscopy exploiting MOIRCS and FMOS/Subaru.