

V103a **DESHIMA: Summary of the First-light Prototype DESHIMA on ASTE**

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We are developing an ultra-wideband imaging spectrometer in the sub/mm, DESHIMA (DEep Spectroscopic HIgh-redshift MAppler), employing an on-chip filter bank and microwave kinetic inductance detectors (MKIDs). DESHIMA will allow us to perform line survey observations with an unprecedented efficiency and will benefit a broad range in sub/mm sciences, such as redshift identification of high- z galaxies.

We overview the progress of the DESHIMA project so far. The prototype DESHIMA with instantaneous bandwidth of 45 GHz (covering 332–377 GHz with $N \sim 49$ filters) has been installed on ASTE in 2017. With recent progress of the data analysis (talk by Tsukagoshi), the calibration method (poster by Takekoshi), and the data reduction method (poster by Taniguchi), we confirm that the end-to-end spectrometer system has achieved photon noise limited sensitivity. The next upgrade of DESHIMA aims for an instantaneous bandwidth of 480 GHz (covering 240–720 GHz with $N \sim 500$ filters) and will be evaluated on ASTE in late 2019.