V138a   Developments in CASA 5.0. and Processing Single-Dish data

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We present a brief overview of the capabilities of the next major-cycle release of CASA 5.0 (Common Astronomy Software Application), in the context of processing (reducing and analysing) single-dish data obtained from ALMA, Nobeyama 45, and ASTE mm/submm Telescopes, with CASA.

Data obtained from these telescopes can now be transformed into, and processed in the standard Measurement Set format. The basic calibration steps: computing the sky and amplitude calibrations (referencing against blank-sky and system temperature) as well as image-generation, data optimisation and data-product analysis are all simply accomplished with CASA 5.0.

The operations of these CASA tasks are typically driven with default parameter settings obtained either automatically from the input observational data, or the parameters settings explicitly input by the user. Data optimisation, such as removal of spectral baselines (i.e. non-astronomical contamination of spectral information) with a range of functions (spline, polynomial, chebyshev, sinusoid), or fitting emission profiles with multiple Gaussian/Lorentizan components can be accomplished either fully or partially automatically.

We will also briefly outline the intended future trajectories for CASA, the new and developing improvements to CASA help documentation, and highlight the significance of input and guidance from user-base, in the ongoing development of CASA Single-Dish.