Contribution ID: **16**   Type: **not specified**

Lecture 11 Wide-field data processing

Thursday, 8 June 2023 10:00 (1 hour)

Surveys using the whole field-of-view of VLBI arrays are now possible, permitting sensitive investigations of multiple sources within a single observation. This mode has already borne fruit, with investigations into many different phenomena such as active galactic nuclei, supernovae, and gravitational lenses, across degrees of the sky.

In this lecture I shall outline the differences between standard VLBI observing and wide-field VLBI. I will focus on how we deal with the multiple phase centres, and the extra direction-dependent effects, such as the atmosphere and primary beams. I will conclude by presenting the VLBI Pipeline (VPIPE), a CASA-based, highly parallelised, pipeline that can automatically process wide-field VLBI in a fraction of the observing time.

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