

# PREFACTOR

## The LOFAR pre-facet calibration pipeline.

Parsets for the generic pipeline that do the first calibration of LOFAR data. Originally in order to prepare said data for the Factor facet calibration (<https://github.com/lofar-astron/factor>), but also useful if you don't plan to run Factor.

It includes:

- clock-TEC separation with transfer of clock from the calibrator to the target
- some flagging and averaging of amplitude solutions
- diagnostic plots
- at least some documentation

There are several pipeline parsets in this repository:

- Pre-Facet-Cal.parset : The “standard” pre-facet calibration pipeline, works on pre-NDPPP'ed data
- Pre-Facet-Cal-RawData-Single.parset : A pre-facet pipeline to work on raw (non NDPPP'ed) data
- Pre-Facet-Cal-RawData-PreAvg.parset : A pre-facet pipeline to work on raw (non NDPPP'ed) data that does the subband concatenating in the first NDPPP step. (To reduce the number of files on systems where this is a problem, e.g. JURECA)
- Initial-Subtract.parset : A pipeline that generates full FoV images and subtracts the sky-models from the visibilities. (Needed for facet-calibration, this could also be done as the first step of Factor.)

Software requirements:

- the full “offline” LOFAR software installation version  $\geq 2.15$  (With small modifications the Pre-Facet-Cal pipelines can be run with older versions, but that is not supported by the authors anymore.)
- LoSoTo
- Python-PP (see <http://www.parallelpython.com/> or <https://pypi.python.org/pypi/pp> )
- Python matplotlib
- WSClean (for Initial-Subtract, version  $\geq 1.9$ )

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