Minutes Busy Wednesday Videocon of July 20 2011

Present: Roberto Pizzo, Emanuela Orru', Chiara Ferrari, Francesco de Gasperin, Neal Jackson, Alexander Mueller, Louise Ker, Cyril Tasse, Giulia Macario, Wendy Williams

Progresses with the commissioning:

- We summarized the progresses made by the different groups working on the following targets/tasks during the last couple of weeks:

  a) **Bootes (L. Ker)**: 4 SBs have been demixed to remove Cas A, Cyg A, Her A & Vir A. The resulting data looks good. The skymodel for the calibration was extracted from the VLSS with PyBDSM. Global calibration gave better results than single-SB calibration. The final map seems reasonable in terms of sensitivity (its sensitivity is 4 times the thermal noise). More SBs will be processed soon. The subtraction of the bright 3C source in the field will be also attempted. NOTE: It should be investigated if more sources are visible in the final image with respect to the input model.

  b) **Global solver on HBA data (N. Jackson, E. Orru'):** Neal showed the Global solver does not seem to improve the quality of the solutions after BBS for 3C219. It should be investigated if this is due to the small number of stations present in this dataset. Moreover, since especially the solutions for the remote stations do not look very good, it should also be verified if the input model is matching the resolution of the data on Remote Station level. Neal will try the same test on a different dataset, with more stations (especially more CS). Emanuela showed that in the case of another HBA dataset (Double Double radio source, observed for the MKSP), the Global solver is clearly improving the quality of the solution. The improvement is especially noticeable in the phases.

  c) **AWimager -> JAWS imager, C. Tasse, B. van der Tol, G. van Diepen, J. van Zwieten):** the algorithm converges and takes into account the W and A terms in full polarisation mode (pol leakage). Ionosphere will be easy to plug in. It will soon run in parallel mode. Tests need to be conduced to check the convergence speed. The remaining uncertainty will be the beam model that the algorithm is using.

The reports are available on line at the commissioning section of the LOFAR wiki:

http://www.lofar.org/operations/doku.php?id=commissioning:busy_wednesdays

ISSUES:

OPEN (work in progress)

a) A parset library will contain the best parset files used by the commissioners. These could be adopted for different data reduction strategies.

b) The implementation of the decorrelation factors in BBS should have HIGH priority.

c) A completion bar is needed in BBS to more easily understand how long the calibration will take: Joris is working on this.

d) *Clean component models of extended and complex sources contain thousands of components. With such models, BBS takes days to perform a calibration using a DFT. The implementation of a FFT is required to speed up the calibration.*

ANNOUNCEMENTS:

- CEP 1 needs to be cleaned up! Please, delete the data that you do not need anymore.
- A few new observations have been performed in LBA. The targets are A2256, Perseus, Virgo A, and CygA (for bandpass studies). For details, see the document AvailableData on the Wiki.
- BBS seems to crash when processing recent observations. The reason has been understood and is related to a recent change in the data format. While Joris is

working on a permanent fix, we can solve the issue by using the following taql command:

taql 'update your.ms/FIELD set LOFAR_TILE_BEAM_DIR=PHASE_DIR'

- Neal wrote a script (*fromsky.py*) that converts a BBS skymodel file into the MODEL_DATA column of a visibility dataset. The script is available in /opt/tools/cookbook on the offline cluster.

- A few VERY ACTIVE commissioners did not have the chance to work on a good quality LOFAR dataset, which could lead to some science. These users could contact Huub/Michael and suggest an observing target. Next requested target is Coma (in HBA).

- BW12 will take place between 19-23 September 2011. A restricted group of experienced commissioners has been invited to come to ASTRON to make significant progress testing the JAWS imager. Note that the imager will be available for initial testing already in a couple of weeks from now, i.e. during the next BWed.

The next Busy Wednesday will take place on August 3. John McKean will be hosting.