

Radio observatory report and current LOFAR issues

Michiel Brentjens

Radio Observatory
ASTRON, Dwingeloo, The Netherlands

LOFAR Status Meeting 20091028

- 1 Observatory status
- 2 Status of issues
- 3 Observation queue

System

- large diffs at CS030 clk 200 MHz
- X/Y phase difference of 180 degrees on CS302
- list nodes are being phased out. All data recording on lsexxx nodes from now on
- lifs nodes will be phased out by November 30
- Sometimes electric fence at RS106

Observations

Polarization only one half data set recorded

SAS/MAC various experiments

TBB observations dumping on new cluster

- 1 Observatory status
- 2 Status of issues
- 3 Observation queue

Bug list (SOLVED)

- Dataquality on new storage cluster not yet good (endianness swap, header problem)
- Unreliable delay compensation (CS030 clock)
- SAS/MAC sets wrong RCU mode on stations
- SAS/MAC mis-points station

Bug list ((almost) EXPLAINED)

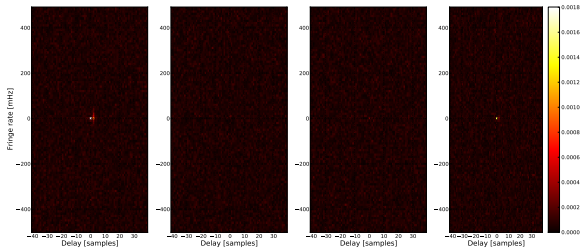
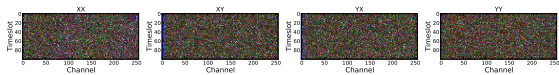
- Writing to new storage abysmally slow for cross correlation products (speed increased by factor of 6)
- Signal paths of even RCUs can jump between a high and low state (LBL/LBH switch broken (by ESD?)). New RCU: ESD diode, and no trafo's. Needs more research. Switches are of same type as faulty HBA delay boards. Why only even RCUs: unexplained.
- Phase jumps in waveform generator test at 200 MHz clock (Eric Kooistra, Brentjens) Test observation in queue.
- Non-hermiticity in ACM blocks of intra-RSP board visibilities in waveform generator tests (Overeem, Kooistra, will be fixed in RSPDriver)
- HBA AC oscillations (Wijnholds)

Bug list (OPEN)

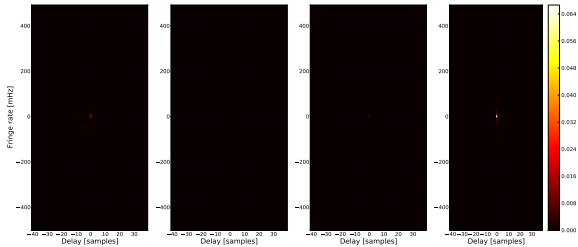
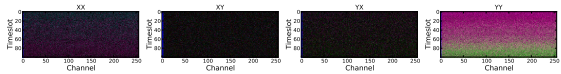
- Discrete jumps in HBA power and RMS
- HBAs take minutes to reach full sensitivity
- Occasional timestamp jumps of 1 in CS302/RSP0 data sent to CEP. Due to CRC errors? (Kooistra, Romein)
- Steps in delay w.r.t. Nancay
- TP variations/ionospheric absorption (Ger de Bruyn)
- AC oscillations Pandey (nobody working on this)
- AC dips (Michiel Brentjens, PSR group. Useful data taken in second psr busy week)

SAS/MAC on stations

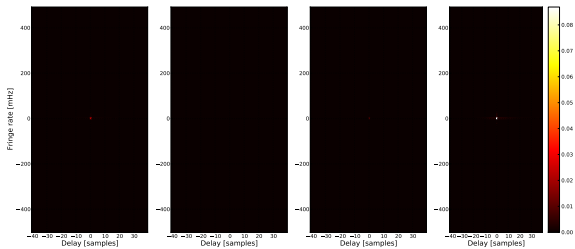
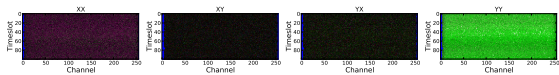
CS302LBA-RS503LBA SB78.MS : 45.312 MHz



CS302LBA-RS503LBA SB78.MS : 45.312 MHz



CS302LBA-RS503LBA SB78.MS : 45.312 MHz



- 1 Observatory status
- 2 Status of issues
- 3 Observation queue

- Anything that helps hunting down causes of primary bugs.
- Now that new storage cluster works, we are open to non-correlating commissioning observations that do not need any support from RO staff.
- first: drift scan of Cyg A for BEam Team.