LOFAR: recent data analysis:

- problems in HBA1 data
- detection of polarized emission

Klik om de titelstijl van het model te bewerken

Ger de Bruyn

TauA   superterp HBA-0

10sep2010

6h at 3s

L2010_20312
SB191
~152 MHz
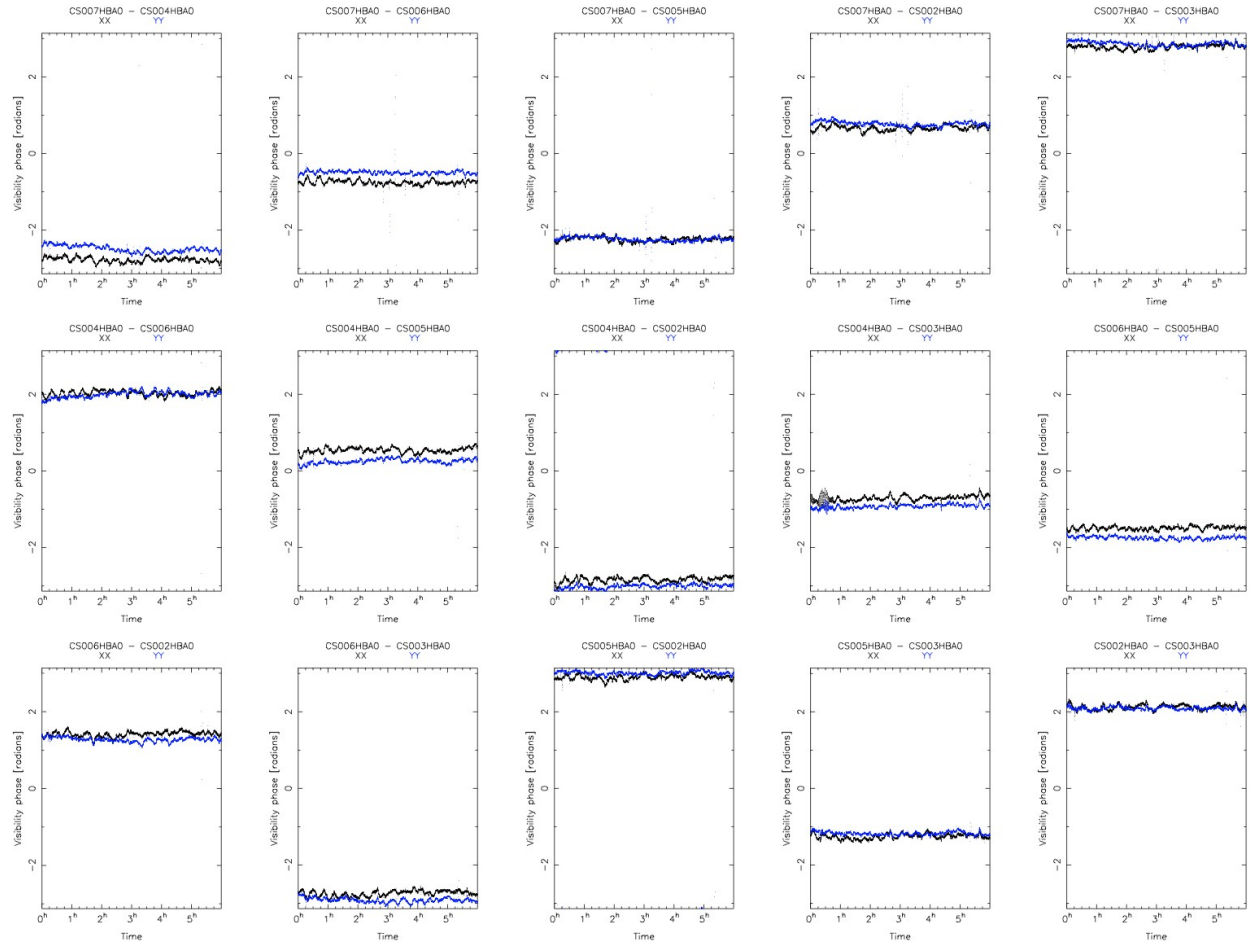
All 15 superterp
cross-
correlations Klik om de
between:

CS002_HBA0
CS003_HBA0
CS004_HBA0
CS005_HBA0
CS006_HBA0
CS007_HBA0

10sep2010

6h at 3s

L2010_20312
SB191
~152 MHz

All 15 superterp
cross-
correlations
between

CS002_HBA1
CS003_HBA1
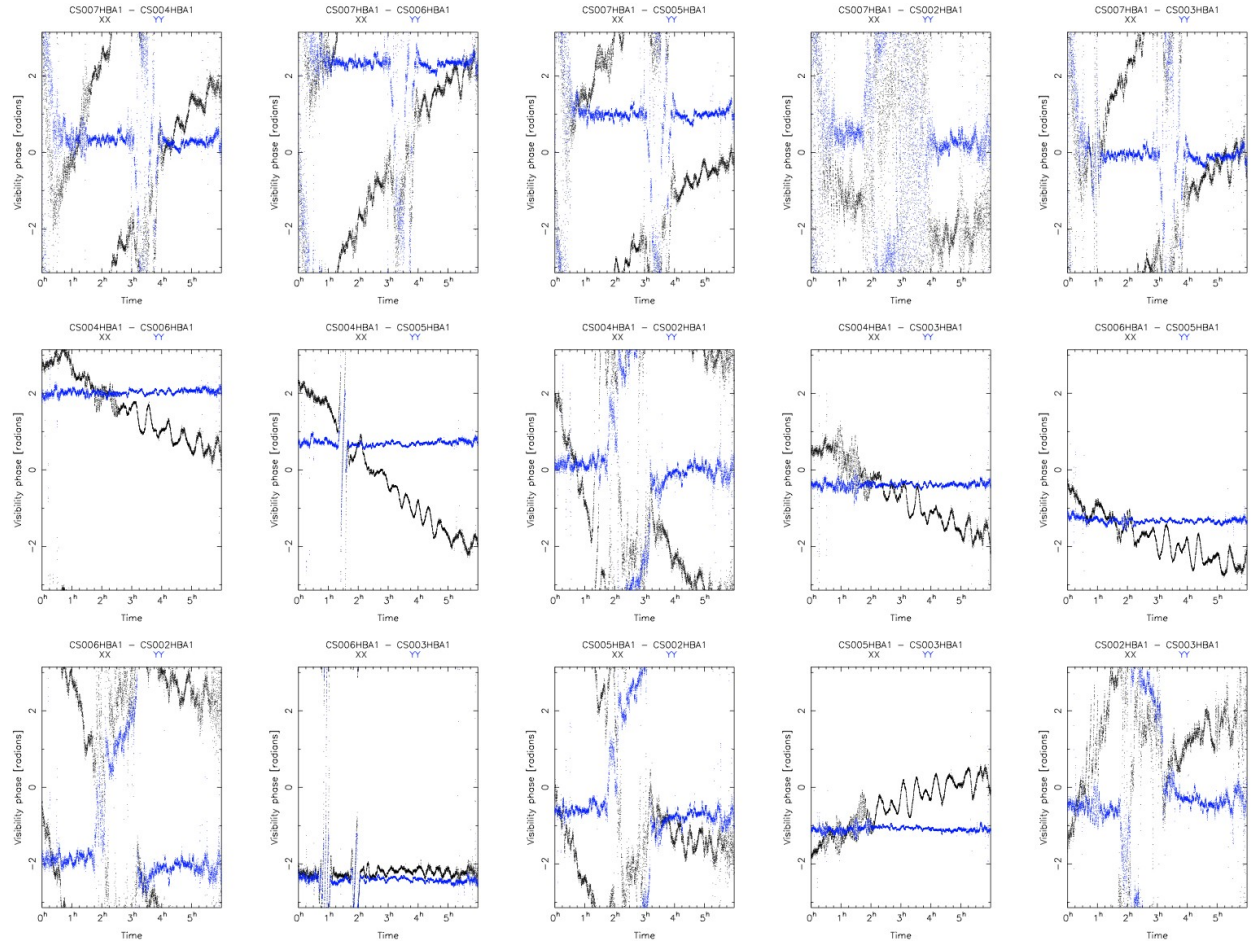CS004_HBA1
CS005_HBA1
CS006_HBA1
CS007_HBA1

Correlations between 3 core stations outside superterp

CS001, CS101, CS301

HBA0

HBA0 data look OK

Klik om de titelstijl van het model te

HBA1 has relative phase drift between XX and YY signals (which might be

HBA1

Lofar Status Meeting
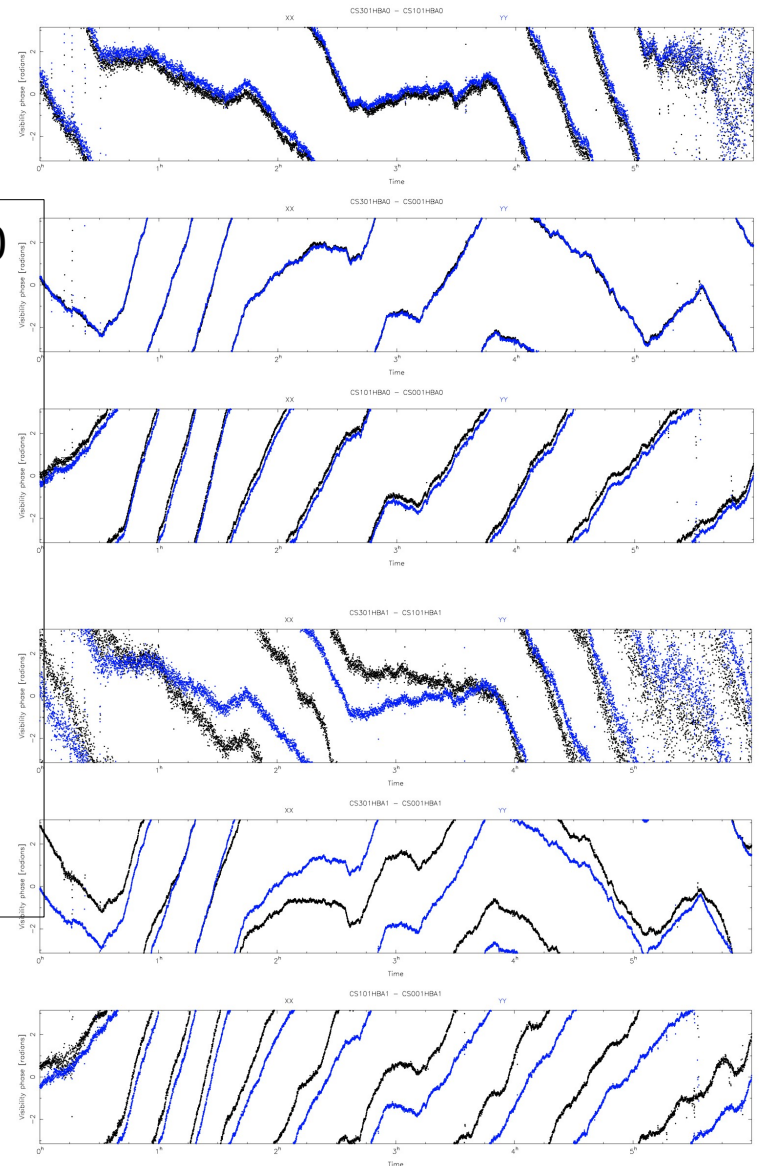
1CS and 2 Superterp stations (CS001,002,003)
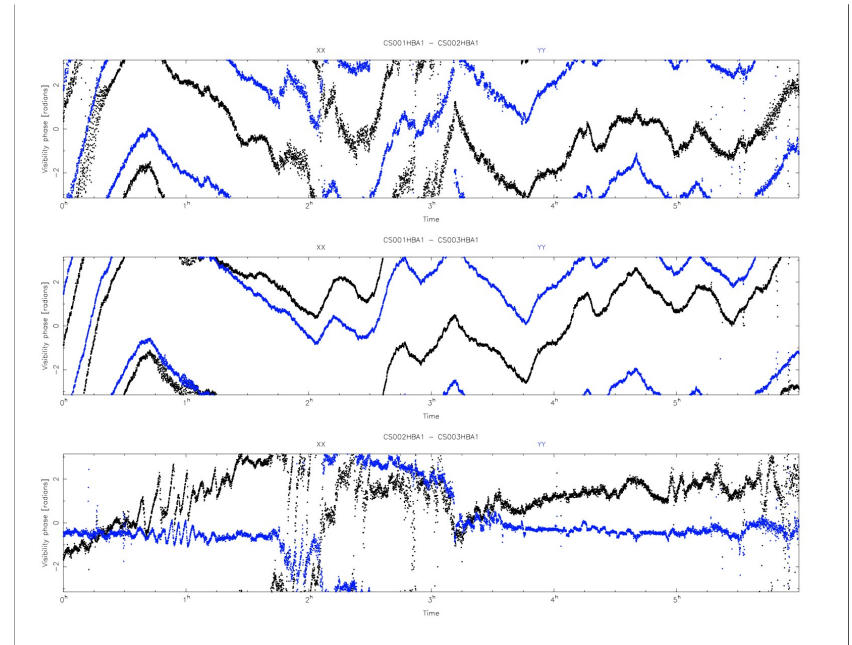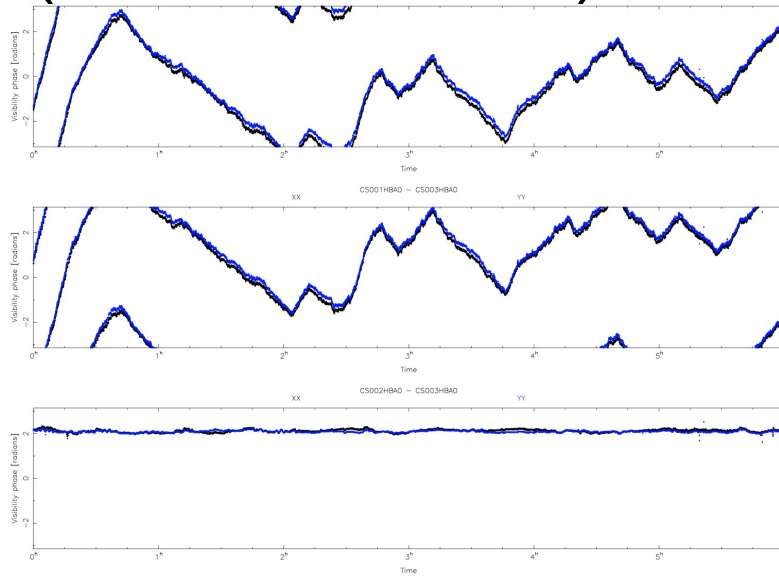
HBA superterp data in 24apr10   3C66-PSRJ0218
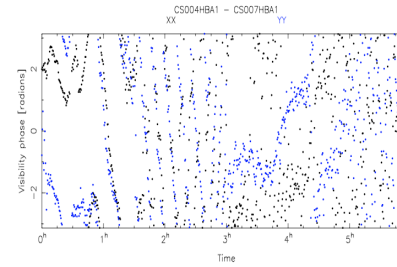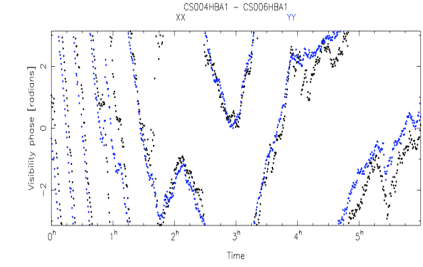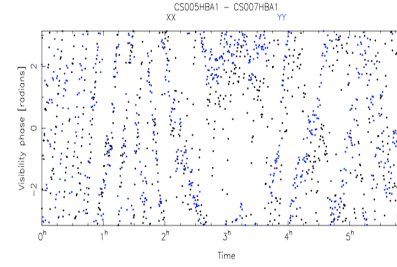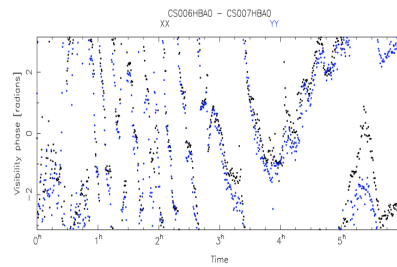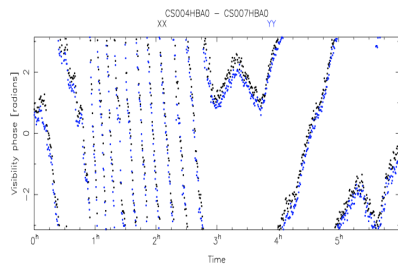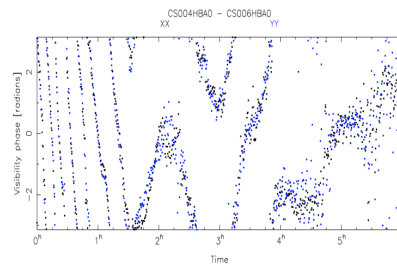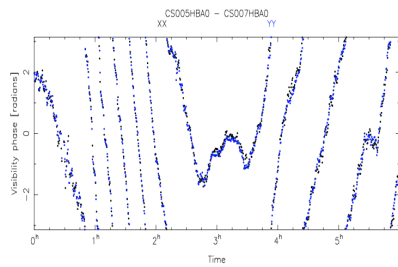
Problems already existed then !

More 'noisy' solutions,
also in other CS (001,032,302)

PSRJ0218+4232

S $_{150MHz}$ ~ 300-500 mJy

~ 50% linearly polarized

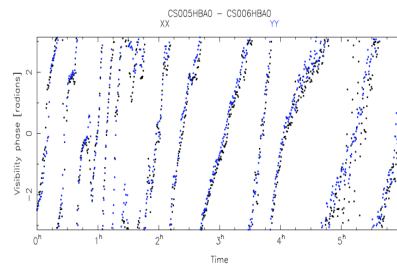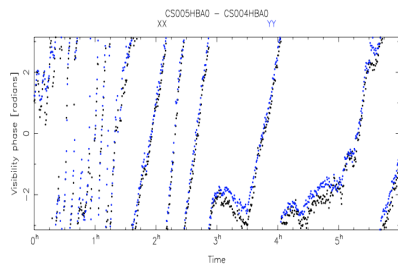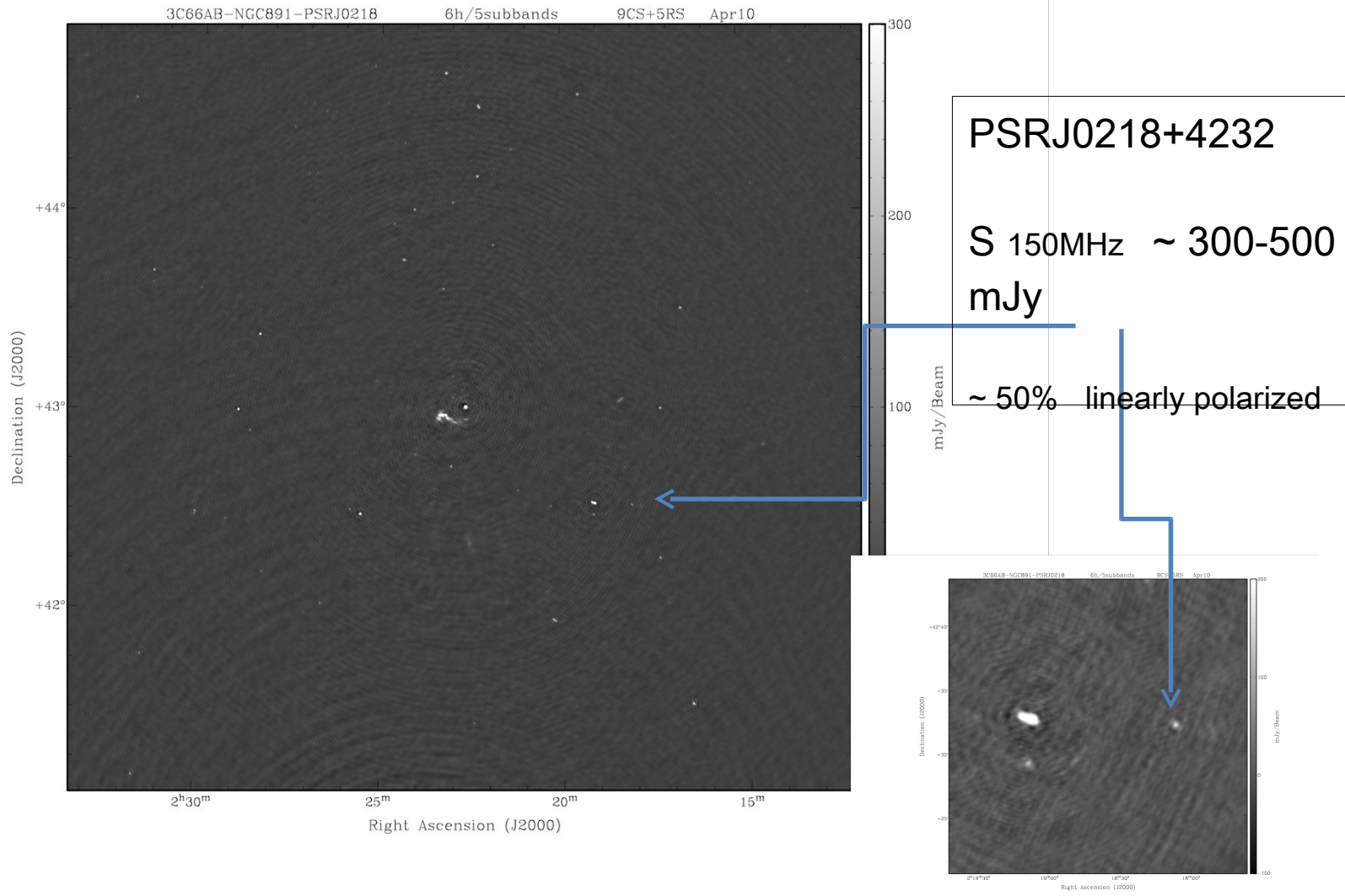# Detection of polarized emission: *Scaife, Heald, de Bruyn, Trasatti,..*

3C66-PSRJ0218
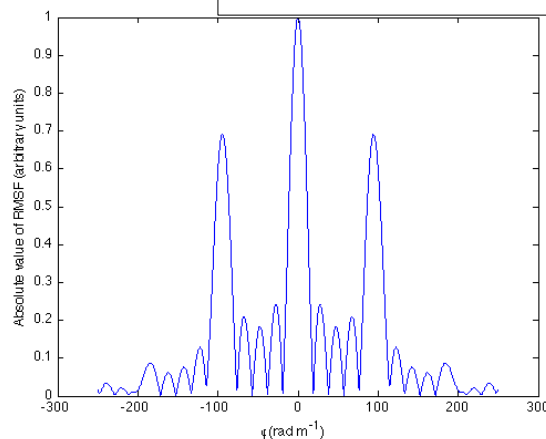
MKSP Busy Week

24 Apr10
UT 0840-1440
L2010-07096

HBA   129 MHz

(SB10+12+14+16+18
 ~ 1 MHz total)
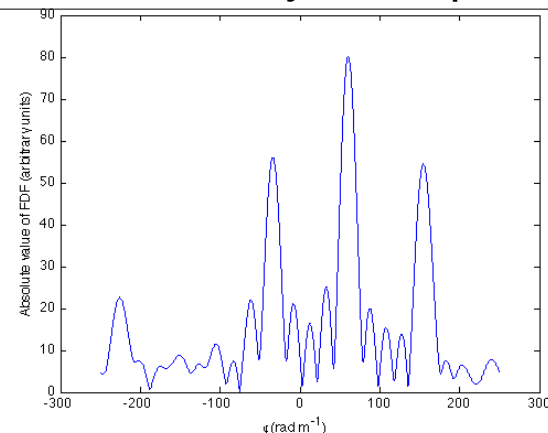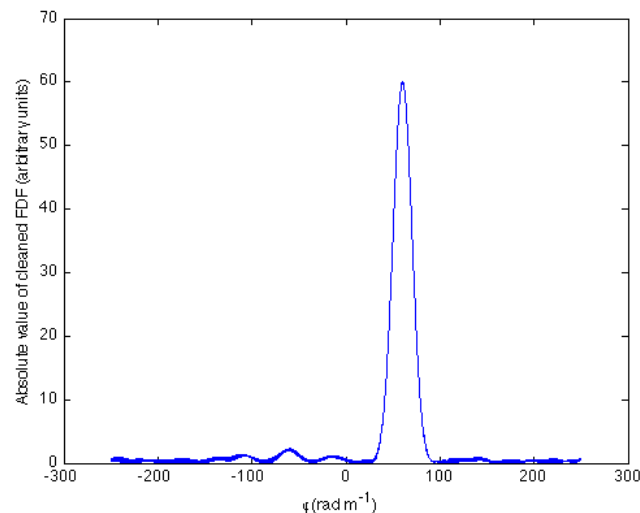
Each subband contains
four 60ch-averages

29-09-2010

RMSF

dirty RM-spectrum

RM-clean

Klik om de titelstijl van het model te bewerken

Peak flux at
RM ~ +60 rad/m2

Should be at -61 rad/m2

Flux density uncertain
but
probably ~ 100-200

Next steps in polarization analysis

Include up to ~100 subbands
⁺ RMSF narrows to   ~ 1.5 rad/m2
⁺ S/N goes up by factor 5.

Accuracy in RM should improve to   ~ 0.002 rad/m2   !   (in 6h)

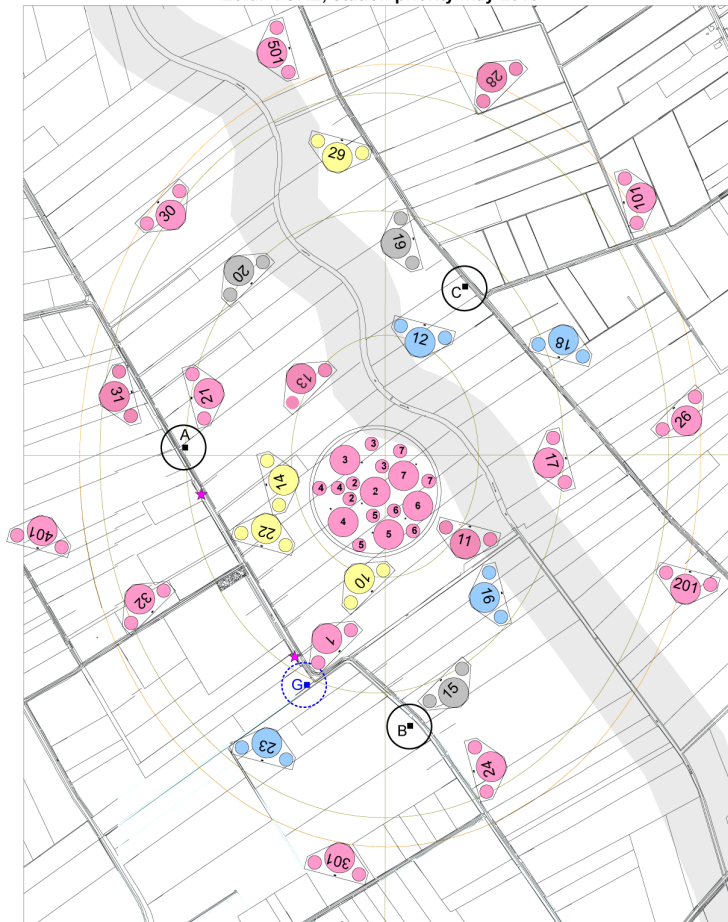Accuracy in (say) 15m will then still be ~0.01 rad/m2
The time variable ionospheric contribution is about 1 rad/m2
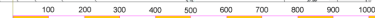
Klik om de titelstijl van het model te bewerken

Analyse RM as a function of time ¿   global TEC monitoring

Lofar CORE; station priority may 2010

Water well (for fire extinguishment)

Power/Glass fiber distribution node for connection to LOFAR stations

Glass-fiber concentrator node

Keep-out area 'Het achterste diep'

Station of "best 18"

Additional station to get "best 25"

To be prepared station site

Planned station location (currently non-existent station)

Note:
CS20 belongs to "blue stations", but has not been prepared because the ground is not owned yet by LOFAR

Arie Huijgen, may 2010, vs 23A

Klik om de titelstijl va