

# The 19th Imaging Busy Week

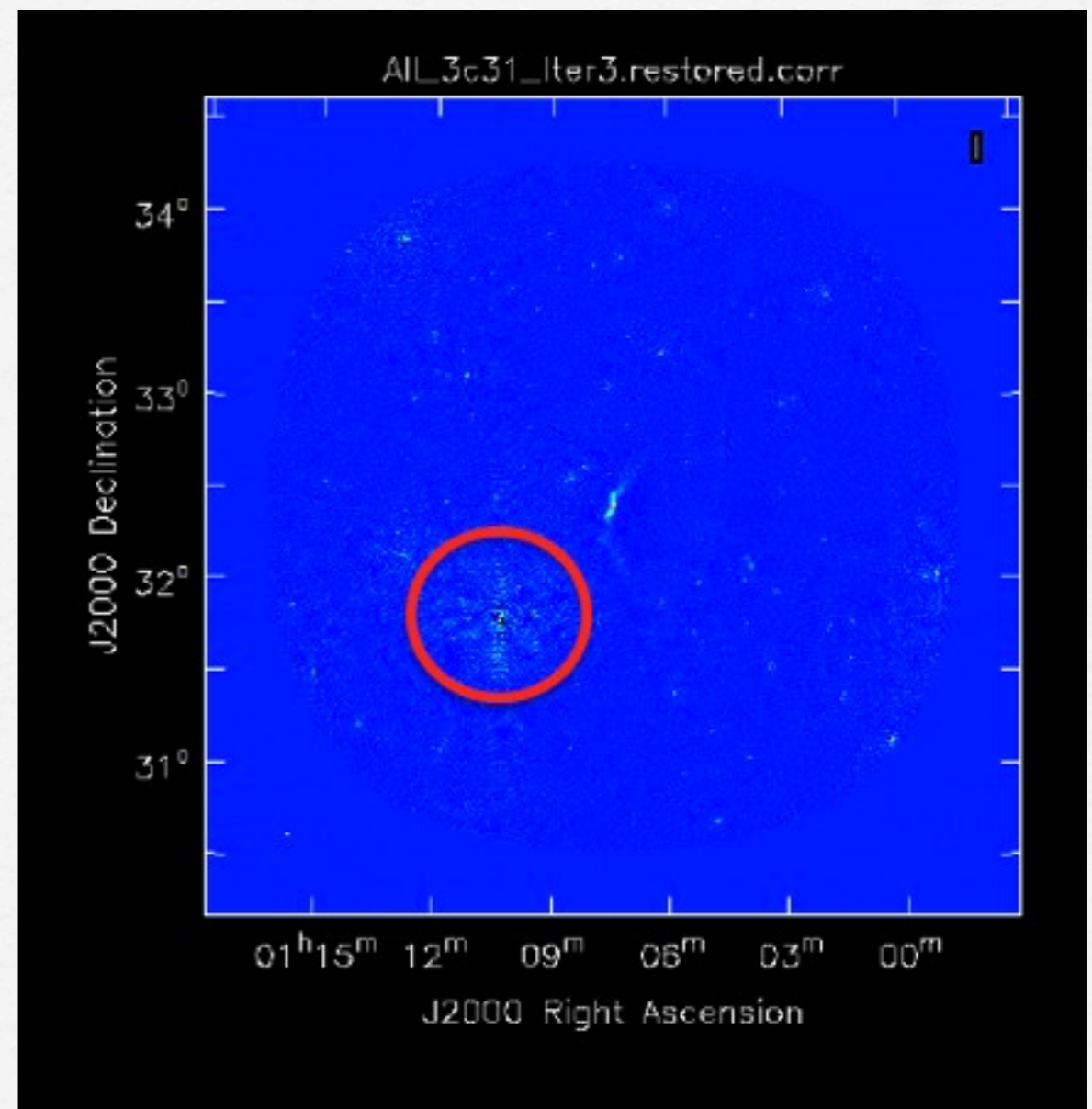
Hamburg, 7-11 October 2013

Annalisa Bonafede  
Hamburg University

# Self-cal loop

Volker Hesse - Nicolas Vichez

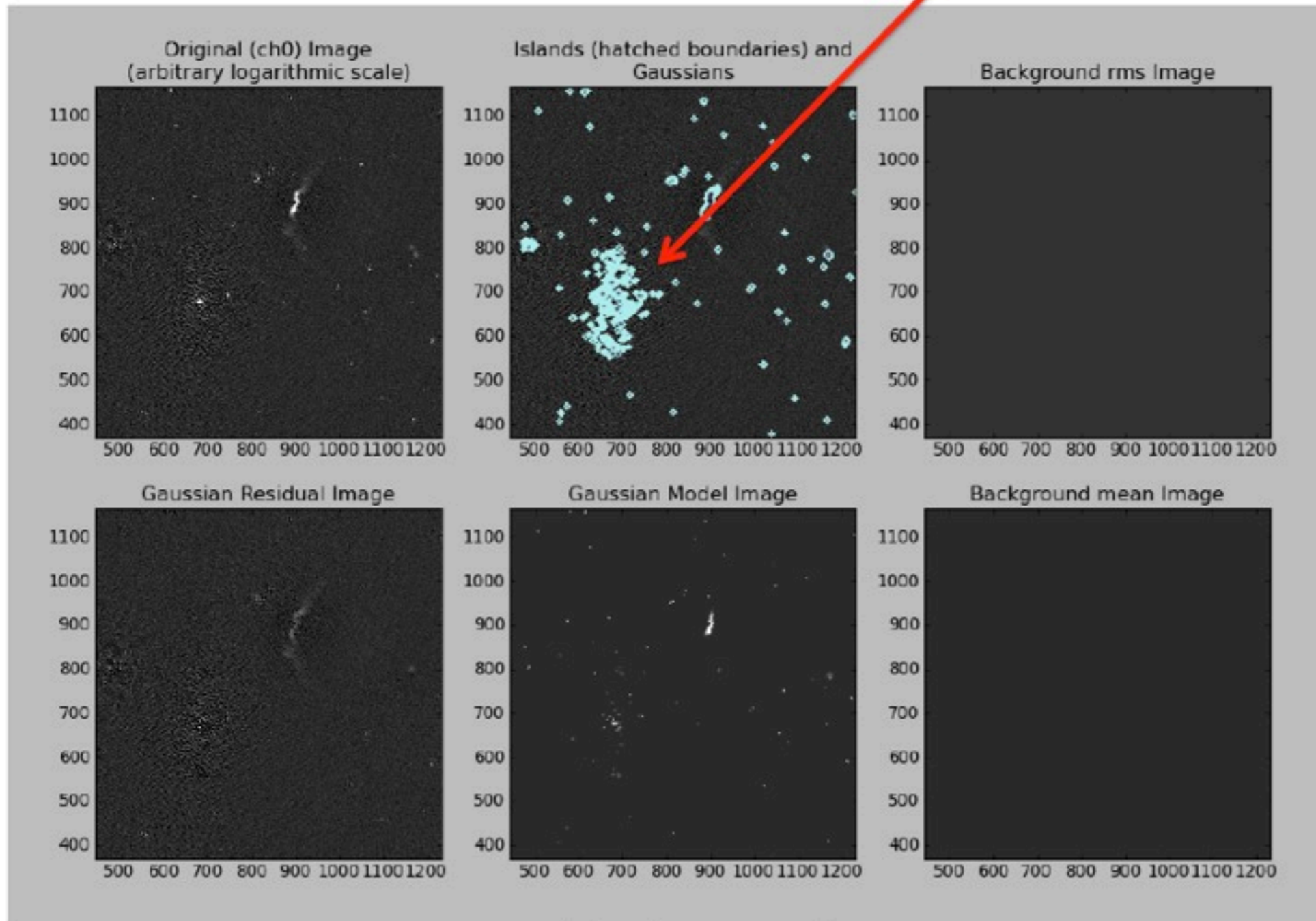
- Aim: test of the self-calibration loop  
AWimager →  
Pybdsim → BBS
- 5 cycles increasing resolution at each step
- Data: 3C31 HBA



# Self-cal loop

Bad Extracted model zoom:

Wrong artefacts extracted

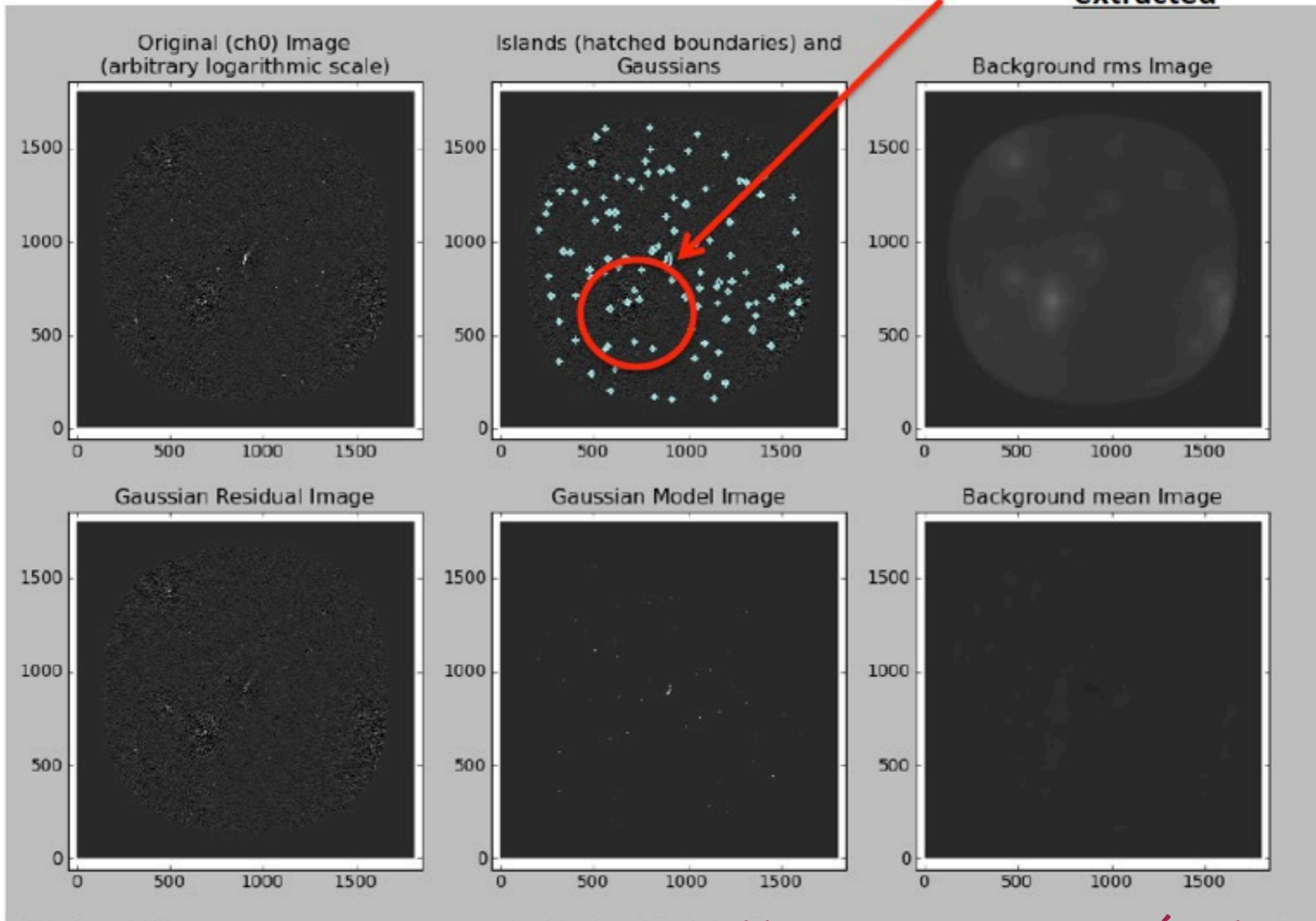


Volker Hesse - Nicolas Vichez

# Self-cal loop

Good Extracted model:

Good ! No more artefacts extracted



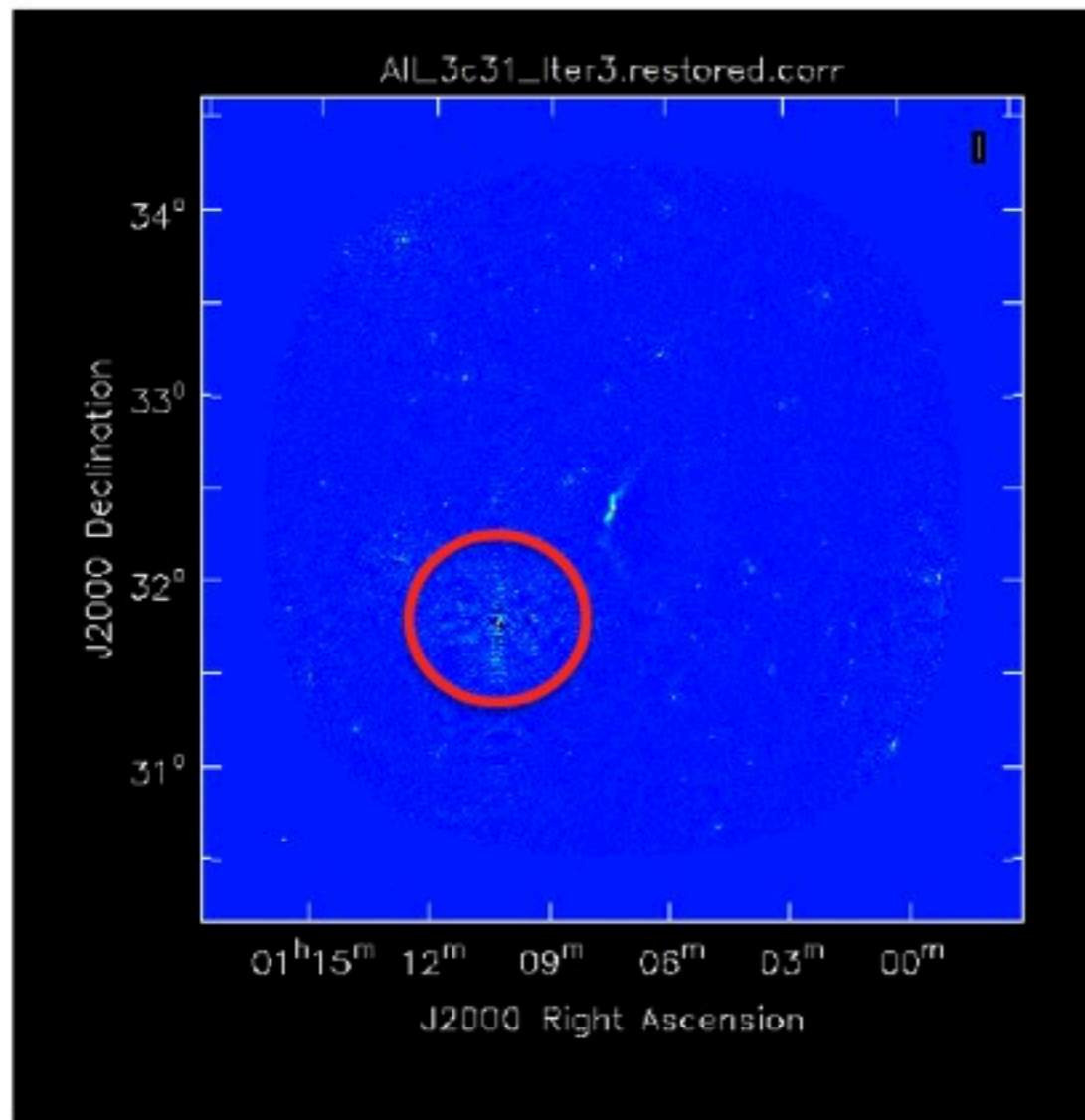
7 October 2013

Imaging Busy Week, Harbinger

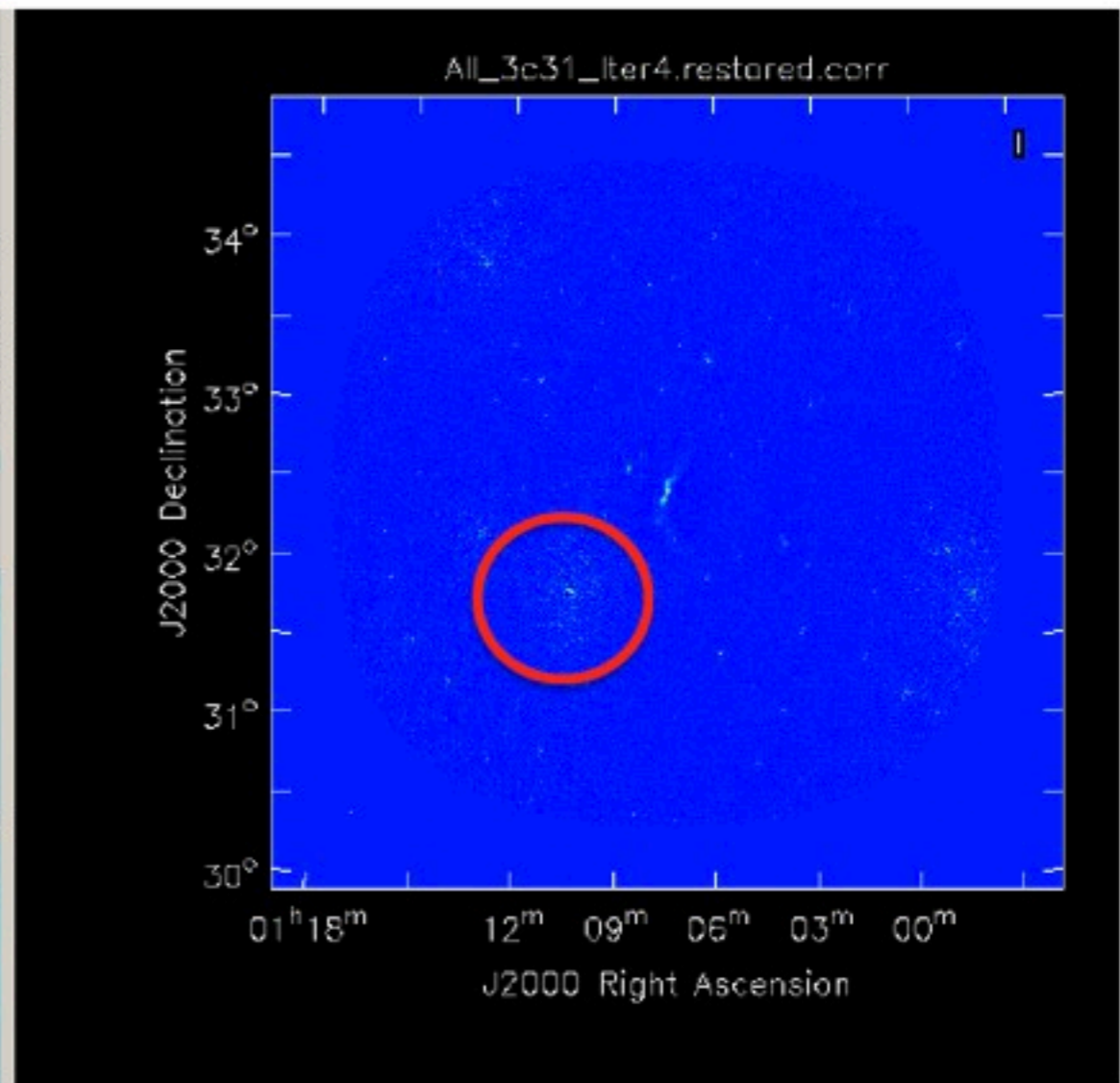
Volker Hesse - Nicolas Vichez

# Self-cal loop

Results on the final image at step 3 (pixel size=10'')



Before



After

Volker Hesse - Nicolas Vichez

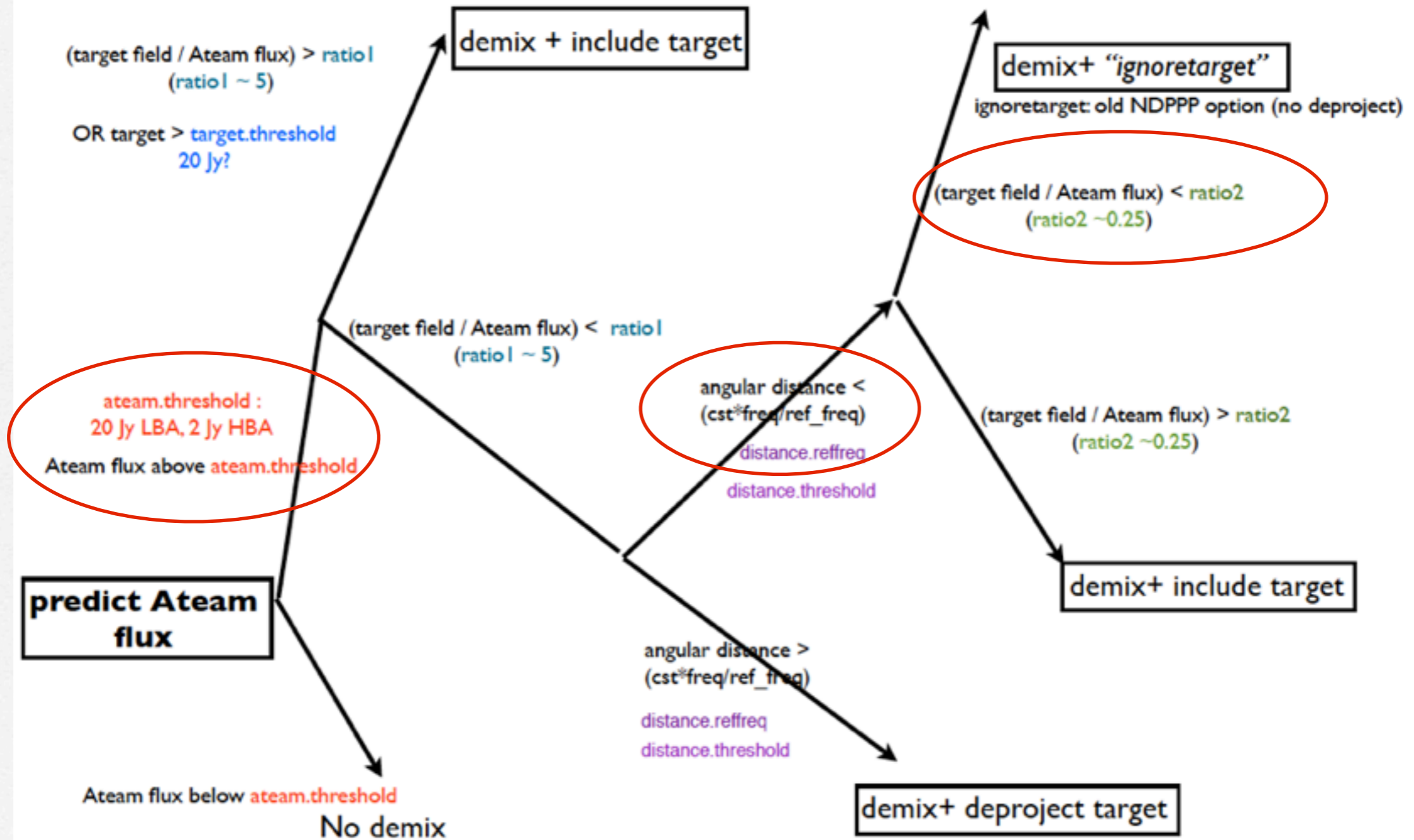
# Smart Demixing - NDPDP

R. van Weeren, R. Kale, A. Drabent, D. Jones, B. Adebhar,

## Aims:

- ❑ Validation of the NDPDP implementation
- ❑ Test good values for the parameters
- ❑ Compare output with the old demixing scheme

# demixing chart



R. van Weeren, G. van Diepen

# Smart Demixing - NDPPP

R. van Weeren, R. Kale, A. Drabent, D. Jones, B. Adebhar,

## Results:

### - Basic functionality tested:

- in/out correctly read/written
- several seg fault found and fixed (by Ger)
- parallel version not working yet
- issues with output log
- several other issues found (e.g. LBA beam model computation)

### - Still to test:

- good values for the parameters in the decision tree



# NDPP correct step

T.J. Dijkema, J. Truustedt, R. Kale, A. Drabent, D. Jones, B. Adebhar,

- ❑ Code validated and feedback given to Tammo
- ❑ BBS and NDPPP correction steps compared - expected behavior

# The Lofar Solution Tool

F. de Gasperin, D. Rafferty, B. van der Tol, J. Sabater Montes, L. Morabito, M. Rubart

## Aims:

- Further code development
- Validation and test of basic functionalities

# The Lofar Solution Tool

*F. de Gasperin, D. Rafferty, B. van der Tol, J. Sabater Montes, L. Morabito, M. Rubart*

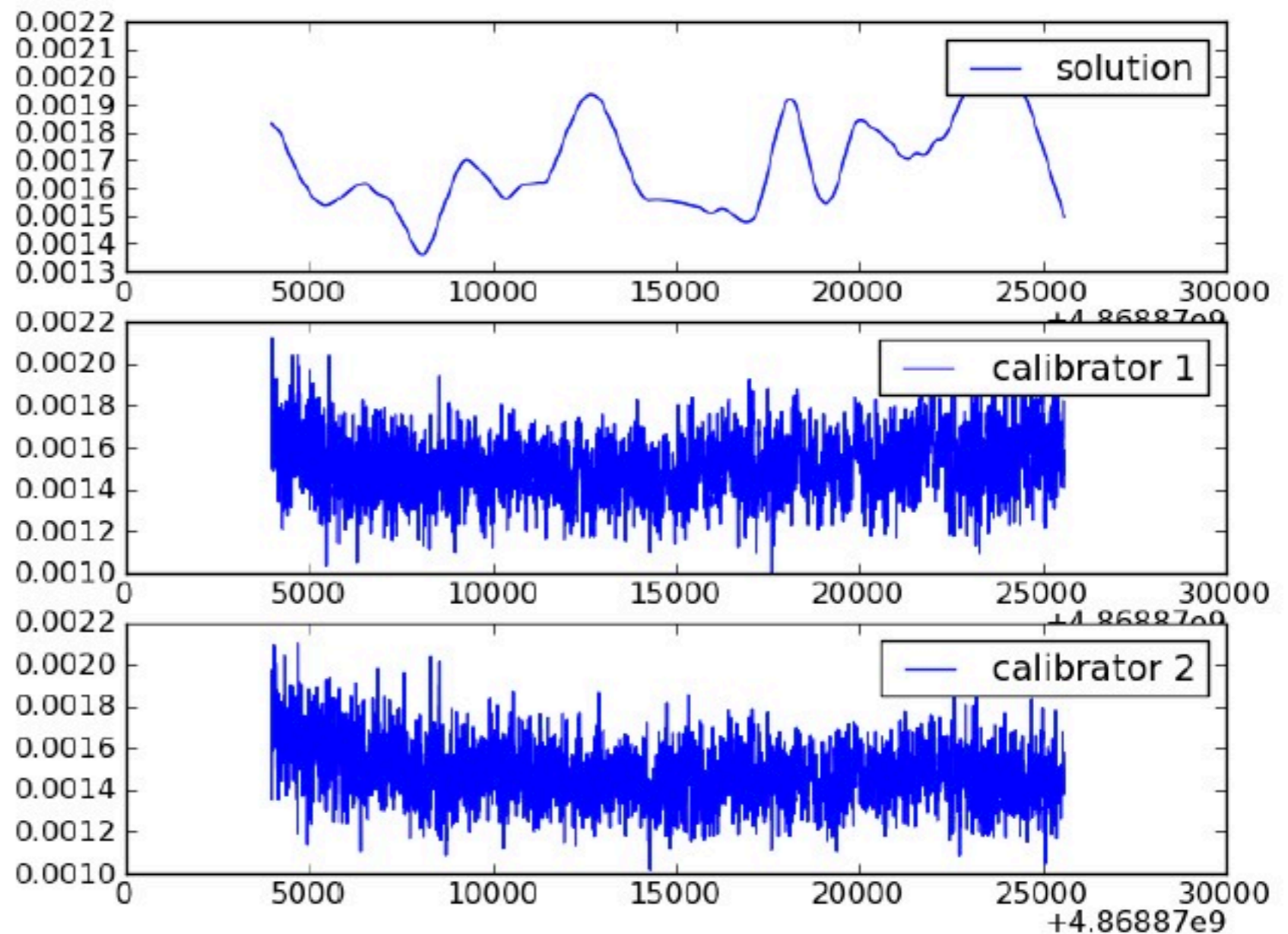
Python code to deal with calibration solutions in a common environment (e.g. smoothing, flagging, interpolating, applying,...)

- H5parm format, reads and write into parmdb format

# The Lofar Solution Tool

F. de Gasperin, D. Rafferty, B. van der Tol, J. Sabater Montes, L. Morabito, M. Rubart

Example:  
interpolation of  
solutions  
between 2  
calibrator  
observations  
(cubic interp)



# Ionosphere and DDE group

*A. Bonafede, M Mevius, A. Mueller*

## Aims:

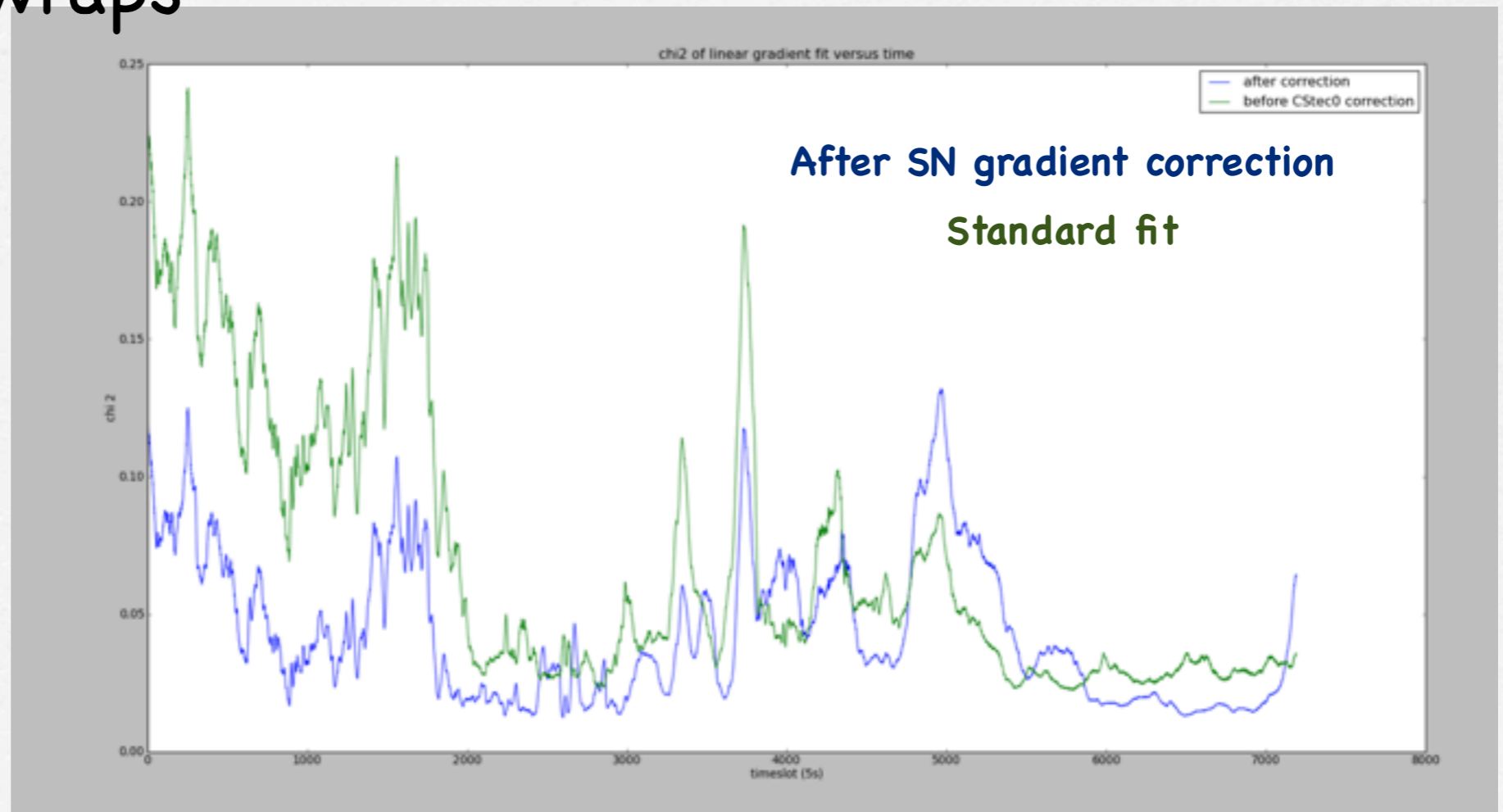
- ❑ Test Maaijke's code to fit dTEC and phase-screen on a calibrator different from 3C196
- ❑ Assess the min number of SB required
- ❑ DATA: 3C286 HBA, 3C295 HBA

# Ionosphere and DDE group

A. Bonafede, M Mevius, A. Mueller

## Results:

- Code works on 3C286 (noisier sol but ok)
- chi2 of TEC fitting improves assuming a NS gradient in removing phase wraps



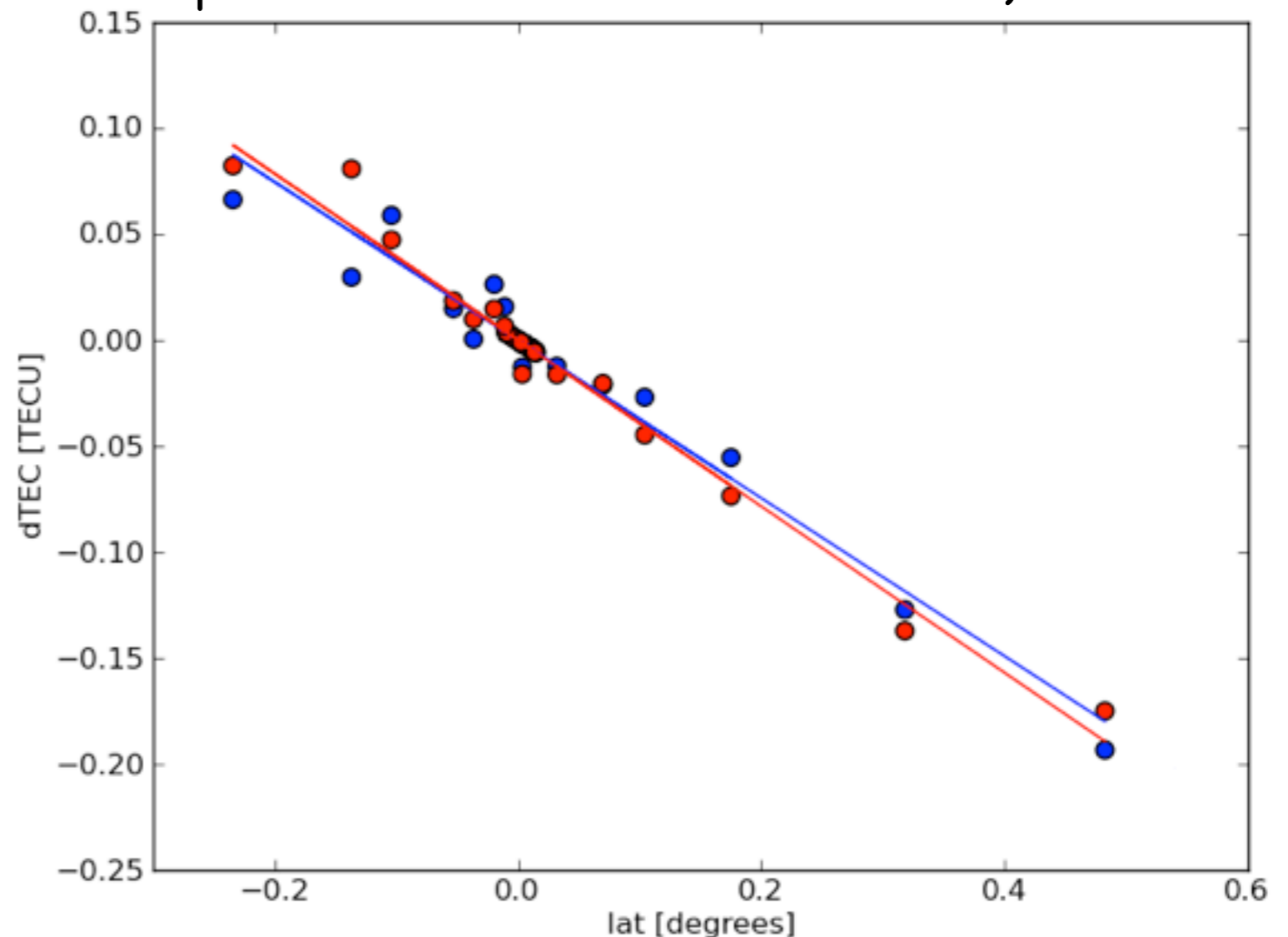
# Ionosphere and DDE group

A. Bonafede, M Mevius, A. Mueller  
Results:

- Fitting procedure improved

(take into account only times when ionosphere shows a linear SN behavior)

fit with time selection (chi2)  
standard fit



# Ionosphere and DDE group

A. Bonafede, M Mevius, A. Mueller

## Results:

### - Instrumental offset?

Constant offset (time and freq) fitted for the CS for 2 observations several weeks apart

Phase offset in instrumental?  
Related to station calibration?

