

# Amplitude Calibration

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# Amplitude Calibration

(Sessions: 3/2007 and 1 & 2/2008)

From the last TOG meeting:

## Amplitude Calibration

(Sessions: 3/2006, 1 and 2/2007)

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## Amplitude Calibration

- Results are generally being delivered in a more timely manner (but two week deadline not always met)
- Issue raised at EVN User's Meeting and delays deemed unacceptable by users
  - Request to directors to raise priority
- Quality seems reasonable, but occasional problems apparent
- Calibration for out-of-session (e-VLBI) needs to be addressed
  - Especially for stations with 'non-stable' configurations

**Is the 2 week deadline effective?  
Is this system working?  
e-EVN?**

**Possible solutions:**

- to produce the rxg file immediately after the CAL experiment.
- to produce each antab very shortly after the experiment.

**At JIVE, we could pipeline the data immediately after the post-correlation operation. We will be able therefore to distribute FITS files and Calibration files (and pipeline results) at the same time.**

**Calibration transfer?**

# Calibration Accuracy

(Sessions: 3/2007 and 1 & 2/2008)

Station	6cm	18cm	6GHz
<b>Cm</b>		<b>0.48(7)</b>	<b>0.13(6)</b>
<b>Ef</b>	0.06(8)	0.05(11)	0.04(6)
<b>Hh</b>	<b>0.17(6)</b>	0.07(6)	0.04(2)
<b>Jb</b>	<b>0.13(8)</b>	<b>0.10(11)</b>	0.06(6)
<b>Mc</b>	0.07(10)	0.09(12)	0.06(6)
<b>Nt</b>	0.09(10)	0.08(8)	0.04(6)
<b>On</b>	<b>0.11(8)</b>	0.06(12)	0.07(6)
<b>Sh</b>	0.07(2)	0.08(4)	
<b>Tr</b>	<b>0.23(9)</b>	0.09(11)	<b>0.15(2)</b>
<b>Ur</b>	0.08(5)	<b>0.08(7)</b>	
<b>Wb</b>	0.05(10)	0.07(12)	<b>0.10(6)</b>
<b>Ar</b>	0.08(2)		

Numbers here are the median amplitude *AIPS gain* factor.

This number will be approx half the error in the SEFD and is the same that you see in AIPS gain plots. The number in brackets after each entry is the number of experiments that were used to determine the median error for that entry.

## 2 years ago:

Station	6 cm	18 cm	21 cm	X-band	6 GHz	UHF
Cm	<b>0.12(2)</b>	<b>0.19(2)</b>			0.06(9)	
Ef	0.07(8)	0.02(7)	<b>0.15(2)</b>	0.03(3)	0.03(10)	<b>0.24(3)</b>
Hh	0.05(4)	0.04(4)		0.04(2)	<b>0.11(1)</b>	
Jb	<b>0.16(8)</b>	0.08(7)			0.07(9)	
Mc	0.06(8)	0.07(7)		0.06(3)	0.03(11)	
Mh						
Nt	0.05(8)	0.07(7)		0.07(3)	0.05(7)	
On	0.07(7)	0.04(7)	<b>0.18(2)</b>	0.09(2)	0.08(8)	<b>0.68(1)</b>
Sh	0.05(5)	<b>0.11(2)</b>				
Tr	0.07(9)	0.06(7)			<b>0.12(7)</b>	<b>0.51(3)</b>
Ur	0.04(8)	<b>0.38(5)</b>				
Wb	0.07(9)	0.07(7)	<b>0.27(2)</b>	0.07(3)	<b>0.16(10)</b>	<b>0.22(3)</b>

## Last year:

Station	6cm	18cm	6GHz	K-band	X-band
<b>Cm</b>		<b>0.31(10)</b>	<b>0.19(10)</b>		
<b>Ef</b>	0.04(7)	0.04(16)	0.05(11)	0.07(1)	0.06(1)
<b>Hh</b>	0.03(2)	0.04(3)	0.05(3)		
<b>Jb</b>	0.08(8)	<b>0.10(17)</b>	<b>0.11(10)</b>		
<b>Mc</b>	0.04(7)	0.06(15)	<b>0.11(11)</b>	0.07(1)	
<b>Nt</b>	0.05(8)	0.07(15)	0.06(11)	0.05(1)	<b>0.12(1)</b>
<b>On</b>	0.06(8)	0.07(15)	0.09(4)	<b>0.14(1)</b>	<b>0.15(1)</b>
<b>Sh</b>	0.06(3)	<b>0.11(10)</b>		0.09(1)	
<b>Tr</b>	0.03(8)	0.09(16)	0.08(9)		
<b>Ur</b>	0.06(4)	<b>0.16(10)</b>			
<b>Wb</b>	0.07(7)	0.06(17)	0.06(11)		<b>0.13(1)</b>
<b>Mh</b>				<b>0.12(1)</b>	

# Calibration Accuracy

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Results are similar to those reported previously. Besides general slight improvements, some worsening is clearly noticed at 6 cm.

- Cm does not provide Tsys monitoring.
- Jb Mk2 does not provide Tsys at K-band
- The problem with the JB cal diode has been reported as solved. However the diode failed in one occasion during a e-VLBI experiment.
- C-band calibration seems to show some general worsening around the network.
- At L-band, RFI remains the major source of errors. Calibration at this frequency is quite variable with occasional experiments having quite large errors. However, most L-band experiments give good results at most stations.
- 6 GHz calibration has shown considerable improvement.
- **It is still unclear which stations provide opacity corrected gain curves.**

## ANTABFS script

Stations continue to produce their own ANTAB files using the 'antabfs' scripts. The ANTAB script has been written and maintained by Cormac Reynolds. From the last session, Giuseppe Cimò is in charge of maintaining and updating the code.

An improved version of the antabfs script will be released before the session:

The major change will be the possibility to create ANTAB from the MK5B (mainly for Ys).

Minor changes:

It has been request to include the frequency on the script to plot the tsys.

Please, let me know if you have noticed some other issues or you would like to introduce other features.