

# Amplitude Calibration

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# Amplitude Calibration

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

From the last TOG meeting:

## 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

# Calibration Accuracy

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

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>	

**Last year:**

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>

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.



# Calibration Accuracy

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Results are similar to those reported previously, but some improvement is noticed especially at 6 cm.

- Cm still does not provide Tsys monitoring.
- Jb cal diode failed in a few occasions in the last year. The failures occurred at L- and C-band in the middle of a session and during e-EVN runs (RL001 and RT004). The problem is under investigation.
- C-band calibration seems to be good across the network.
- At L-band, RFI seems to be 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.
- In general, 6 GHz calibration has shown neither considerable improvement nor worsening, though there is room for improvement.
- 22 GHz calibration in 2007 was reasonable. However, only 1 experiments have been analysed.



## ANTABFS script



Stations continue to produce their own ANTAB files using the 'antabfs' scripts. An improved version of the antabfs script was released by Cormac Reynolds. A few bugs affecting the previous versions were corrected.

There was an improvement of the usability of the script, such as clearer on-screen outputs and addition of new switches ("-help" and "-debug").

Also, new features have been included:

- The logs for MkIV racks using external filters (e.g. 1 MHz) can now be parsed properly (see experiments EI009\*).
- AIPS ANTAB has a limit on the number of Tsys entries that it can accept. antabfs now automatically reduces the number of entries put in the ANTAB file to this limit.
- The excess entries are written as comments so can be restored if desired.
- The script should run much faster for VLBA racks than it previously did.
- The names of the RXG file(s) used to produce the ANTAB file are now included in the ANTAB file for reference.