

# EVN Amplitude Calibration

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**EVN TOG MEETING, Granada, October 4 2018**



**JIVE**

Joint Institute for VLBI  
ERIC

**EUROPEAN**



**NETWORK**

# Session 3 2017 Oct

- The following table gives the **median absolute error** in the antenna gain amplitude. This number will be approximately 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.

**21cm****18cm****6cm**

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<b>BD</b>	0.21 (1)	0.06 (10)	0.11 (5)
<b>EF</b>	0.12 (2)	0.12 (13)	0.07 (18)
<b>HH</b>		0.11 (6)	0.07 (13)
<b>IR</b>		0.46 (2)	0.36 (14)
<b>J2</b>	0.33 (2)	0.16 (11)	0.06 (13)
<b>MC</b>		0.47 (13)	0.24 (14)
<b>NT</b>			0.16 (11)
<b>O8</b>	0.16 (2)	0.20 (11)	0.28 (9)
<b>RO</b>		0.84 (1)	
<b>SV</b>	0.37 (2)	0.07 (10)	0.09 (6)
<b>T6</b>		0.23 (9)	0.11 (12)
<b>TR</b>		0.28 (12)	0.07 (14)
<b>UR</b>	0.21 (2)	0.37 (11)	0.54 (7)
<b>WB</b>	0.29 (2)	0.18 (12)	0.18 (18)
<b>YS</b>			0.06 (18)
<b>ZC</b>	0.25 (2)	0.10 (10)	0.25 (5)

# N17C3

amplitude+phase versus channel

unique: sess317.C2048nme/14:22:00.00/J1848+3219

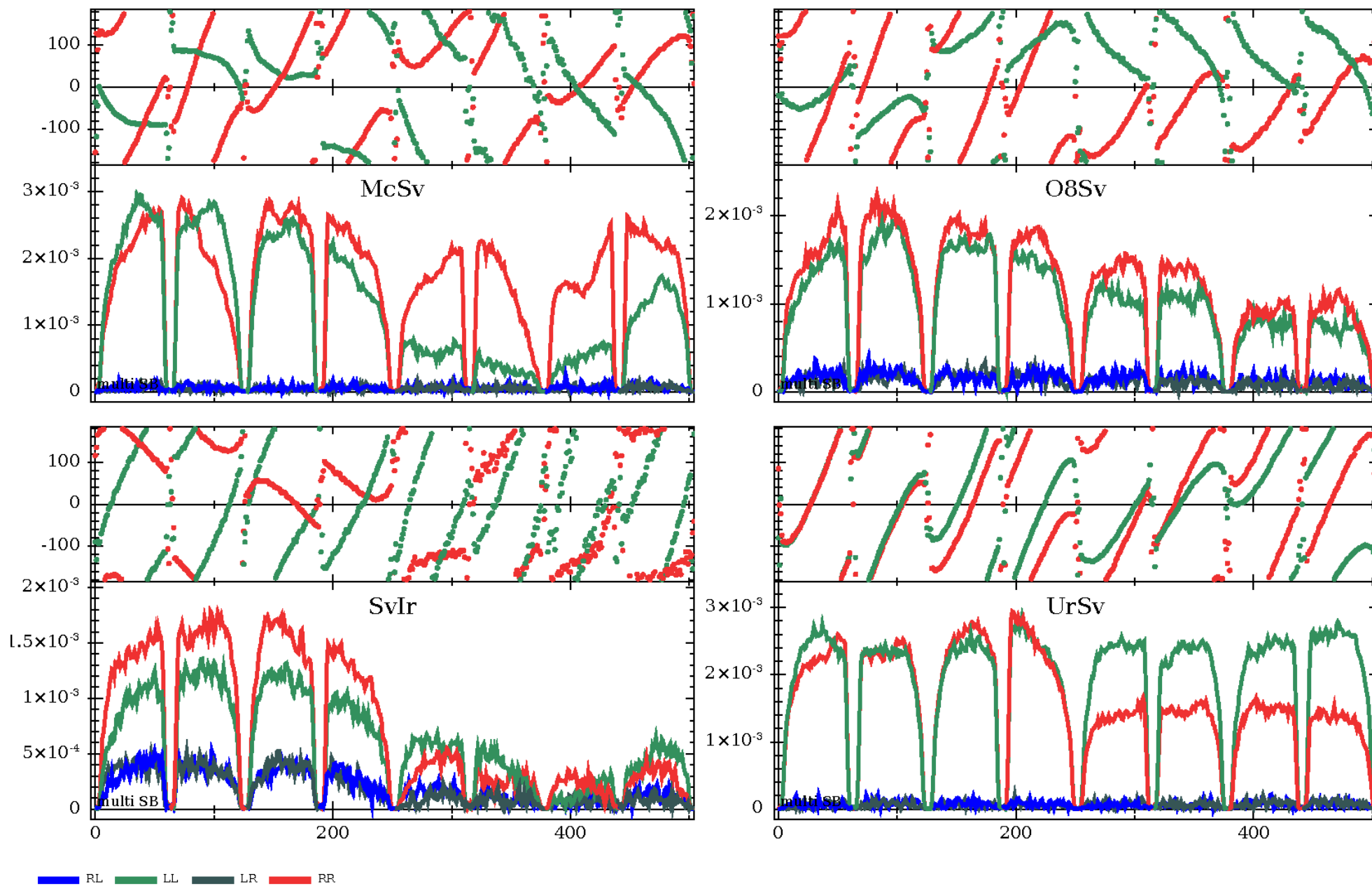
Pol=RL,LL,LR,RR;Nsub=8;;;

[ Vector avg'ed 0/14h19m00.50s->14h24m59.50s]

data: n17c3.2048.ms [DATA]

jops@<??> 2018-10-02T17:18:58

page: 1/1



# Session 1 2018 Feb

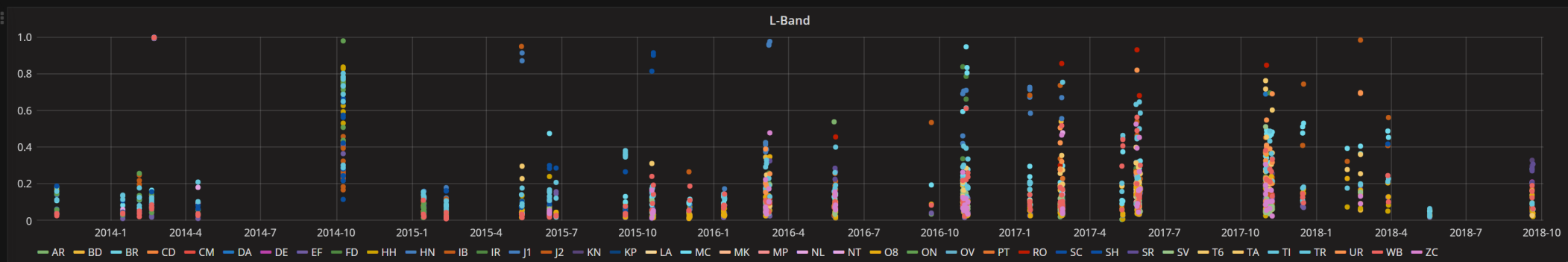
- The following table gives the **median absolute error** in the antenna gain amplitude. This number will be approximately half the error in the SEFD and is the same that you see in AIPS gain plots. The number in brackets after each entry is the number of experiments that were used.

# 18cm

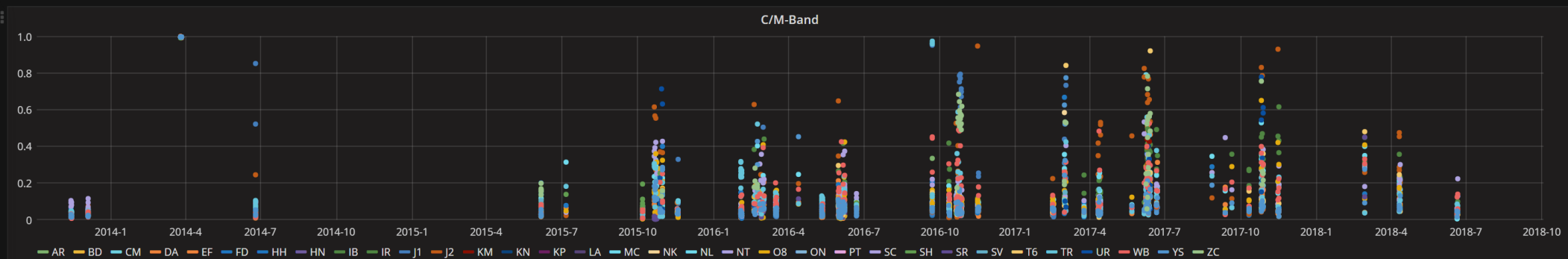
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<b>BD</b>	0.06 (2)
<b>EF</b>	0.15 (4)
<b>HH</b>	0.07 (5)
<b>IR</b>	
<b>J2</b>	0.48 (4)
<b>MC</b>	0.40 (5)
<b>NT</b>	
<b>O8</b>	0.17 (5)
<b>RO</b>	
<b>SV</b>	0.15 (2)
<b>T6</b>	0.28 (3)
<b>TR</b>	0.20 (5)
<b>UR</b>	0.69 (2)
<b>WB</b>	0.17 (2)
<b>YS</b>	
<b>ZC</b>	0.11 (2)

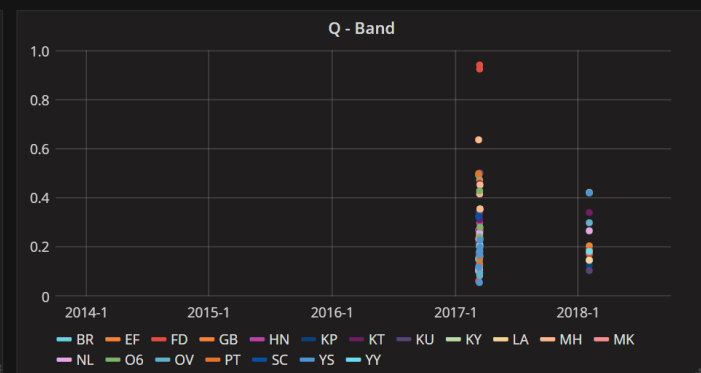
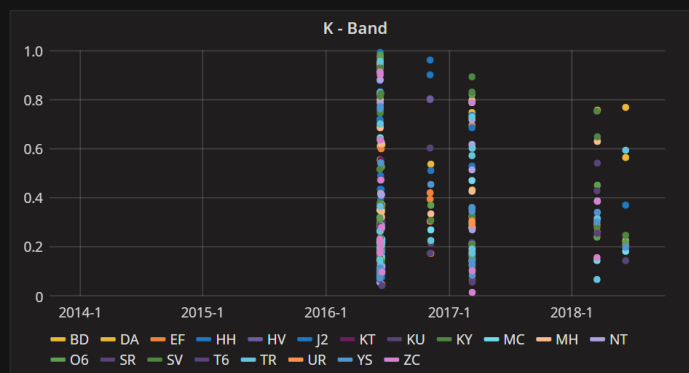
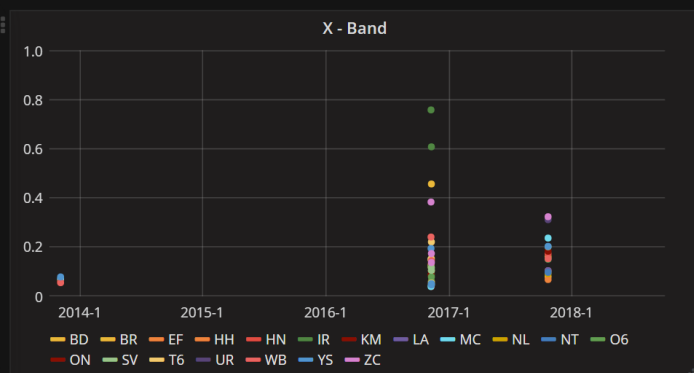
▼ L-Band



▼ C/M - Band



▼ X-Band, K-Band and Q-Band



# Gain-Elevation Curves

- Be careful!
  - Occurred in 18cm observation 2017\_II
    - The POLY line in the antabfs which defines the gaincurve polynomial was found to be crashing AIPS's APCAL task in the EVN pipeline.
  - The original values:
    - POLY=-32.5107411463,0.986751123831,-0.00726391333786
    - First value is exceptionally large.
  - POLY line from a 5cm Irbene experiment had something more rational looking:
    - POLY=0.895462558131,0.00336916335962,-2.71463804443e-05
  - By using the 5cm gain curve polynomial in the 18cm experiment (with a DPFU correction to match the SEFD to that expected from the EVN status table [because  $SEFD = T_{sys} / DPFU * POLY$ ]) it was possible to get reasonable solutions from the APCAL task when re-running the pipeline.
  - After notifying the station, Irbene responded that there was no appropriate L-band gain curve at the time and that the C-band one can be used in the meantime.



# Antabfs and feedback shame

- JB
    - No antabfs.
    - But feedback now yay!
  - Tianma
    - Multiple times no antabfs
      - EG093B, EG102C
    - Sometimes no reply to emails.
    - No feedback (n17l3)
  - Irbene
    - N18SX1 (no reply)
    - EG102E
    - No feedback session 3 nmes?
  - Kvasars
    - N18SX1
    - N18K2
  - Torun
    - EC057C
    - N17L3
  - Noto
    - EC057C (no reply)
- Westerbork
    - EG102C, EG102D, RG009C
- :) Many stations updated their antabfs scripts!
- :/ Bug in antabfs.py min.60s

