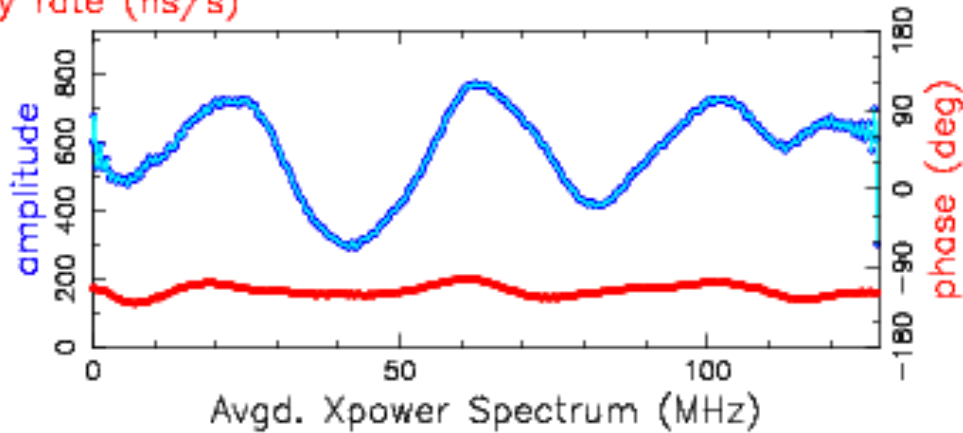


To whom will concern it,

In order to understand the influence on the computed phase by different values set for sky frequency, I made the following tests to correlate 5-sec. data recorded by Mark 6.

1. Sky frequency =230 GHz, zoom-band mode supported within 1,200-1,328 MHz.

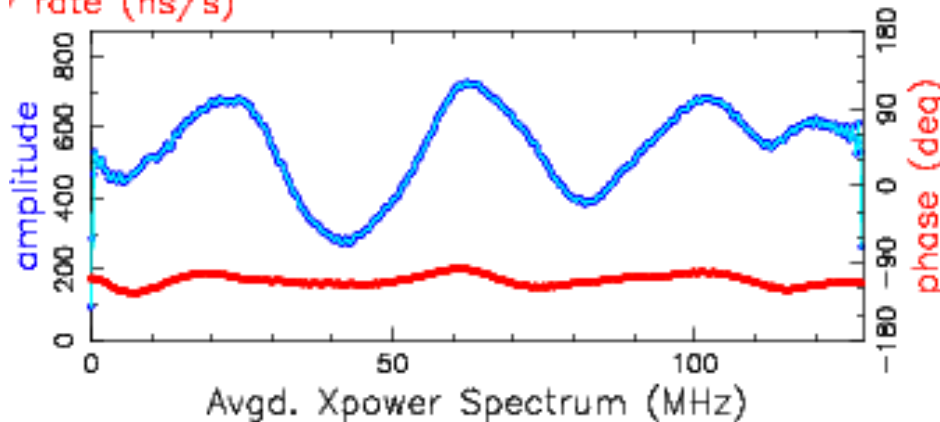
y rate (ns/s)



Phase = -115.4°
Ref. Freq=231200 MHz

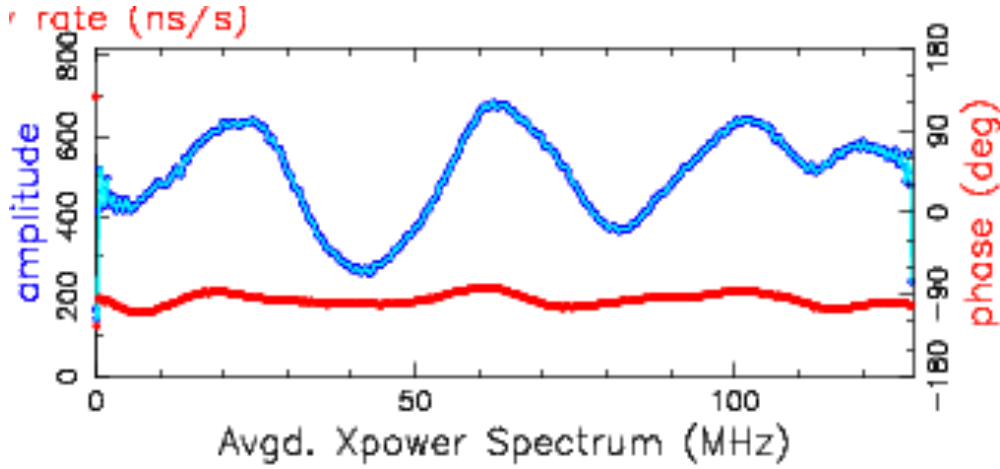
2. Sky frequency =230 GHz. I extracted one data within 1,200-1,328 MHz and cross-correlated with other full-band data at 1,200-1,328 MHz (starting from 231,200 MHz).

r rate (ns/s)



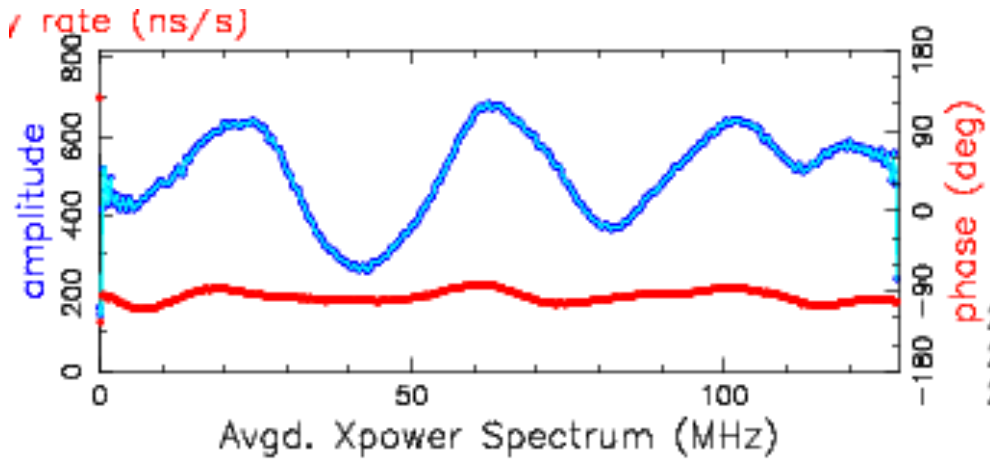
Phase = -109.7°
Ref. Freq=231200 MHz

3. Sky frequency =23,1200 MHz. I extracted both data within 1,200-1,328 MHz and cross-correlated them.



Phase = -95.5°
Ref. Freq=231200 MHz

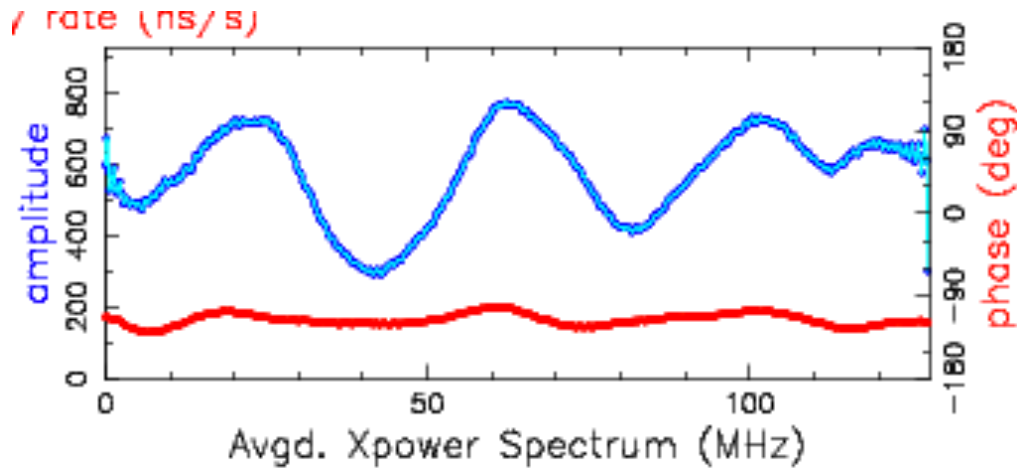
4. Sky frequency =230 GHz. I extracted both data within 1,200-1,328 MHz and cross-correlated them.



Phase = -95.5°
Ref. Freq=230 GHz

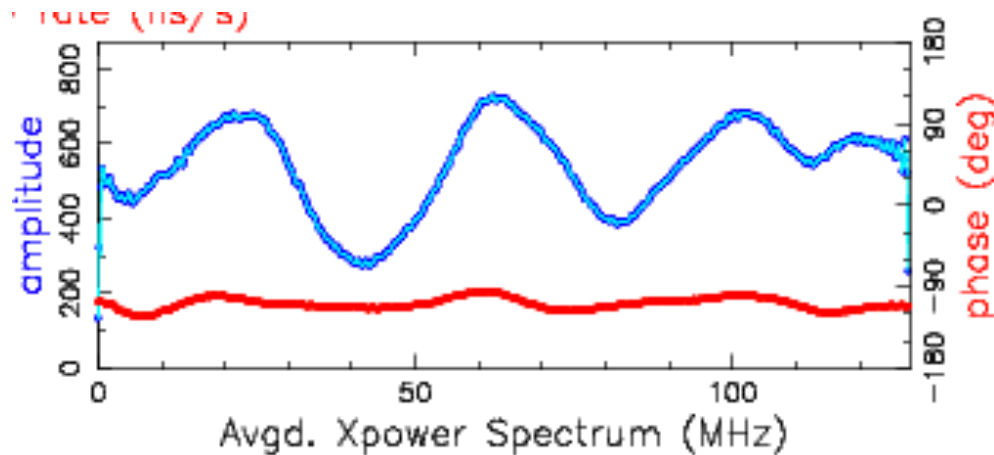
Point I. According to the comparison between the 3rd and 4th cases, it seems the setting value for the sky frequency has no obvious effect, but (please go on the following tests)

5. Sky frequency =86 GHz, zoom-band mode supported within 1,200-1,328 MHz.



Phase = -115.3°
Ref. Freq=87200 MHz

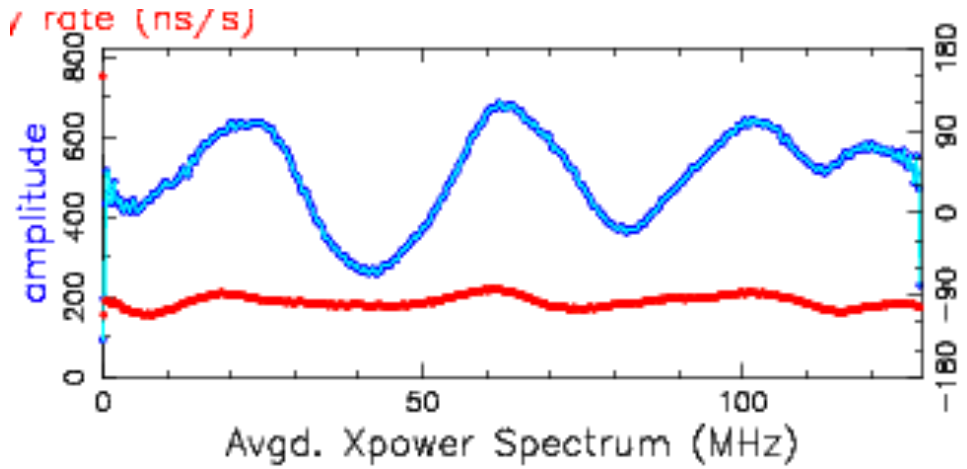
6. Sky frequency =86 GHz. I extracted one data within 1,200-1,328 MHz and cross-correlated with other full-band data at 1,200-1,328 MHz (starting from 87,200 MHz).



Phase = -108.2°
Ref. Freq=87200 MHz

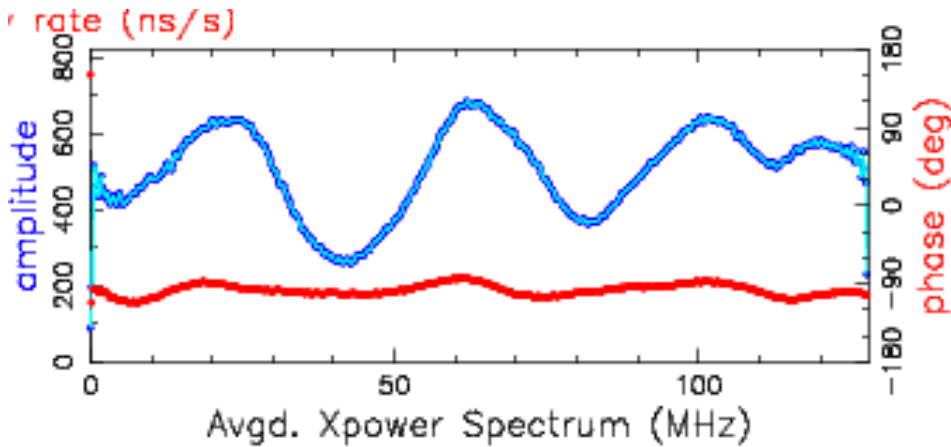
Point II. Comparing to the 1st and 5th cases, the obtained average phases are almost the same. But comparing to the 2nd and 6th cases, the obtained average phase has a deviation of 1.5°. So I do not certainly know whether the different setting on sky frequency actually causes the difference or not.

7. Sky frequency =87,200 MHz. I extracted both data within 1,200-1,328 MHz and cross-correlated them.



Phase = -96.8°
Ref. Freq=87200 MHz

8. Sky frequency =86 GHz. I extracted both data within 1,200-1,328 MHz and cross-correlated them.



Phase = -96.8°
Ref. Freq=86 GHz

Point III. The same as the comparison between the 3rd and 4th cases, no phase shift between the comparison between the 7th and 8th cases; however, the obtained phase in 7th or 8th cases has a deviation of 1.3° comparing to that obtained in 3th or 4th cases.

According to the aforementioned examinations, I am confused with whether the measured phase indeed have any relation to the sky (reference) frequency.

For the tests among 1-3, and 5-7, it seems that there is a phase shift when I reduced the bandwidth of the data and re-performed the cross-correlation.

For which origin to cause such a shift in phase distributions, **does anyone have any explanations or comments?**