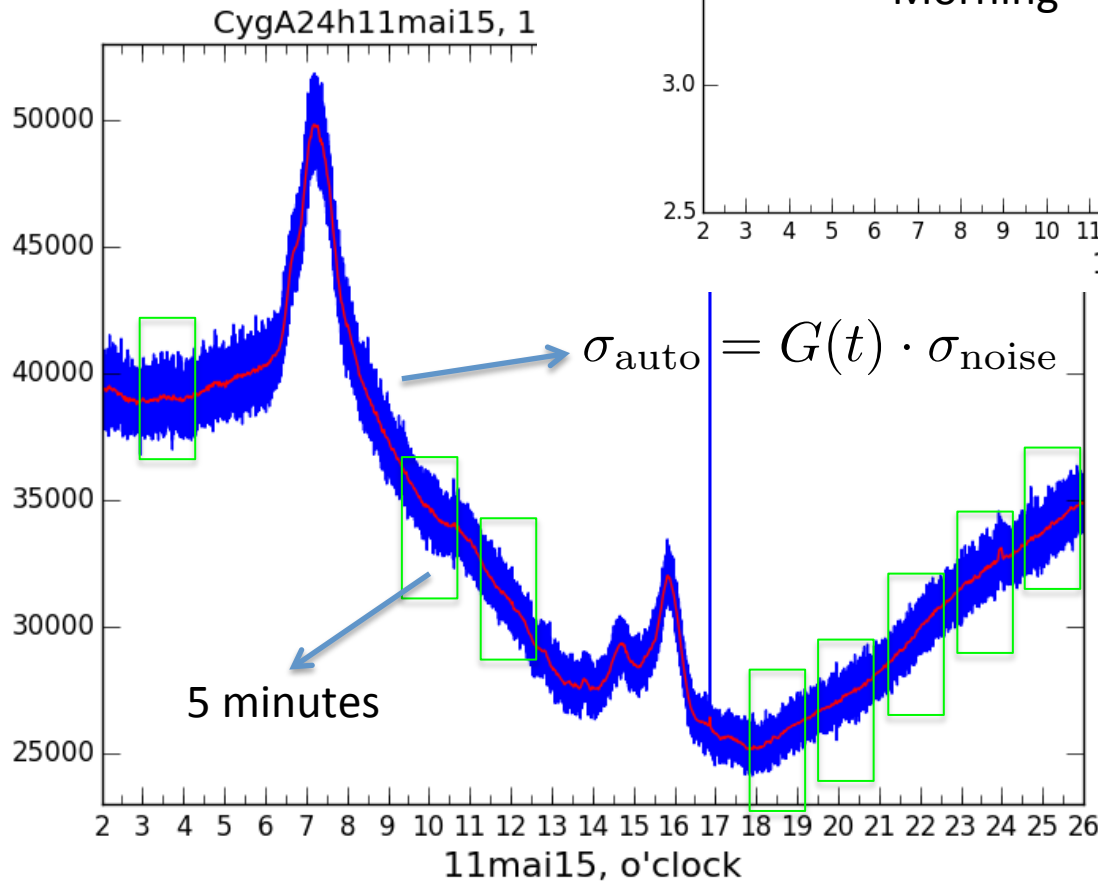
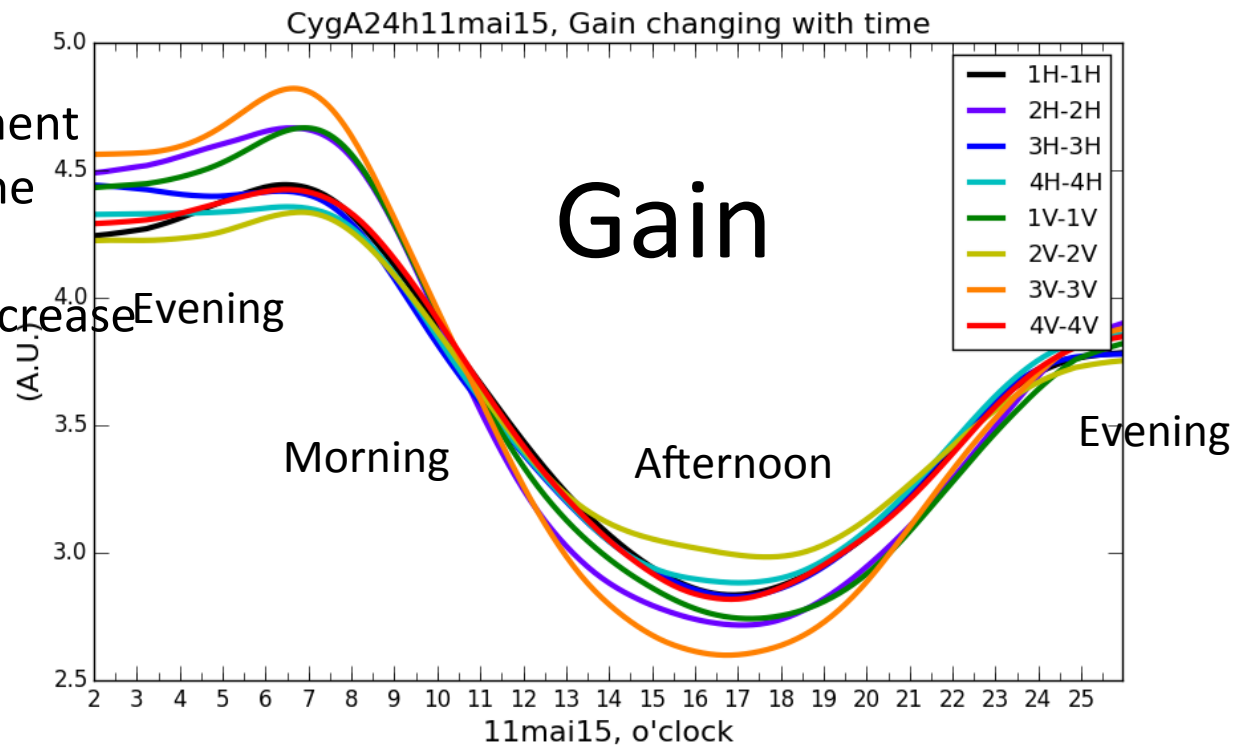


PAON4 map making

Qizhi Huang

12 Nov. 2015

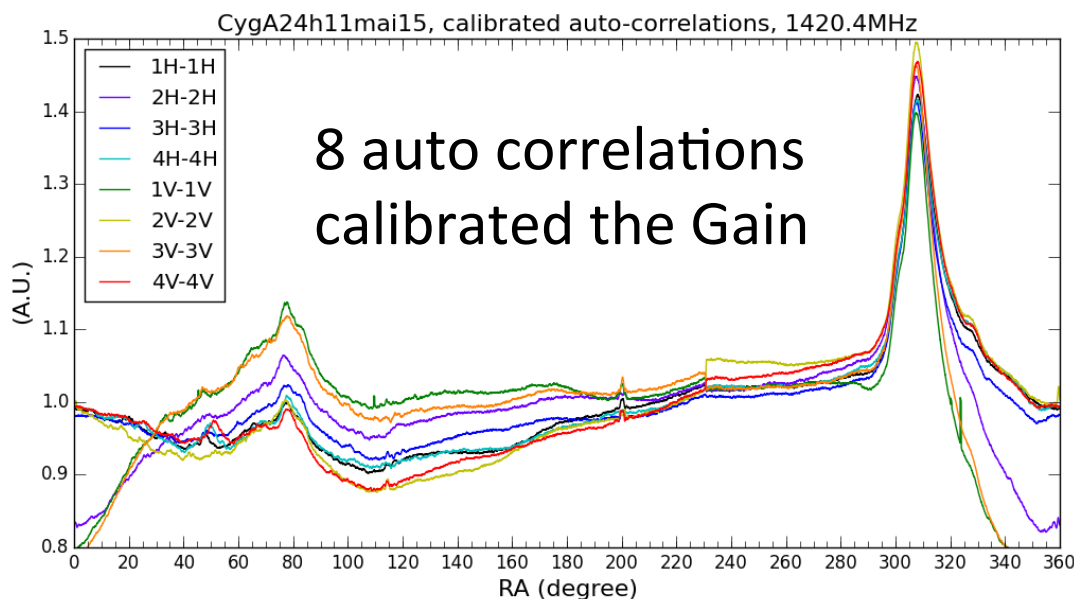
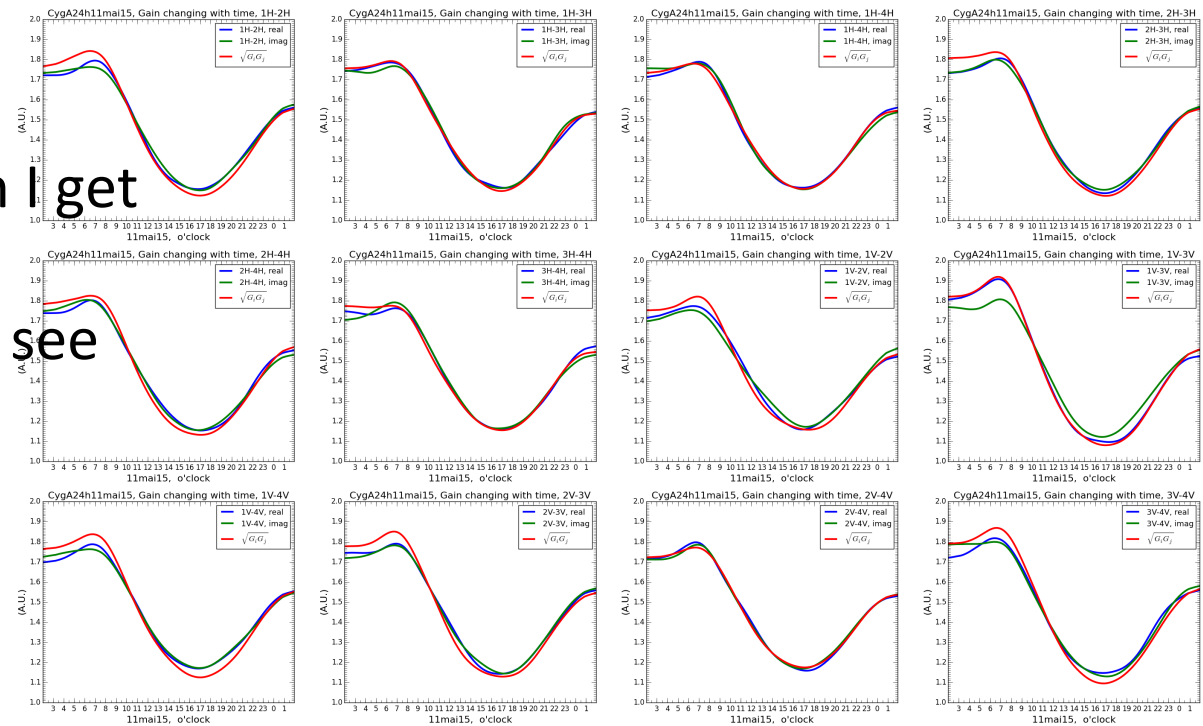
We find that the Gain will decrease when the environment temperature increase, and the Gain will increase when the environment temperature decrease.

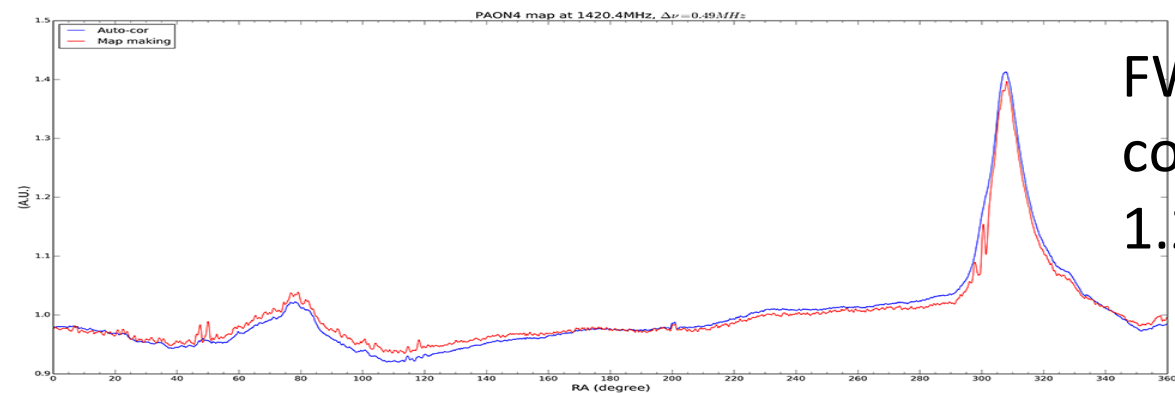
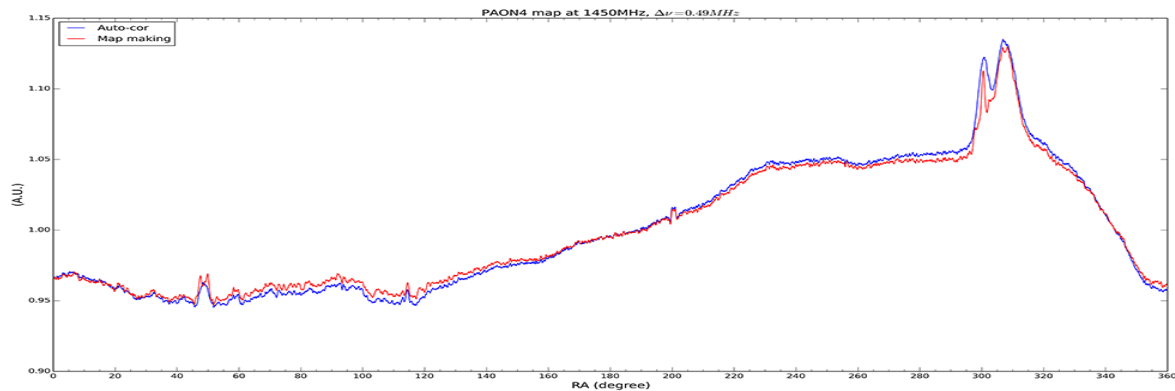


Assume std of the system noise is stable, then the std of the noise in the auto-correlation is proportional to the Gain

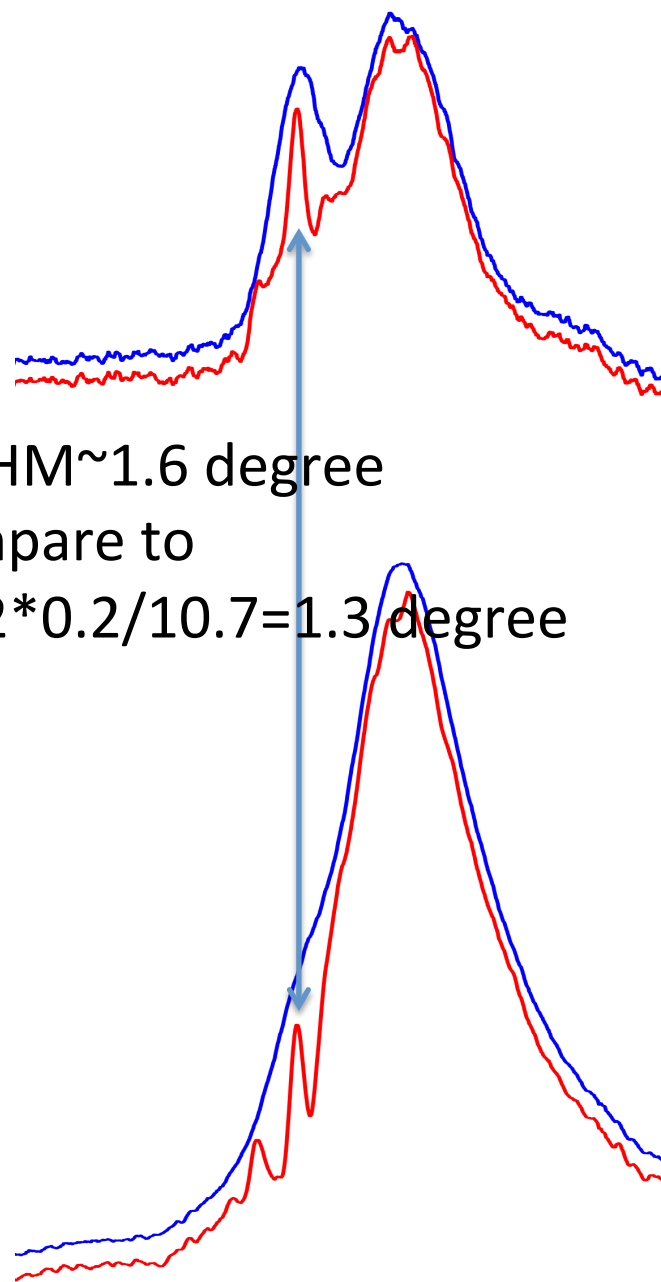
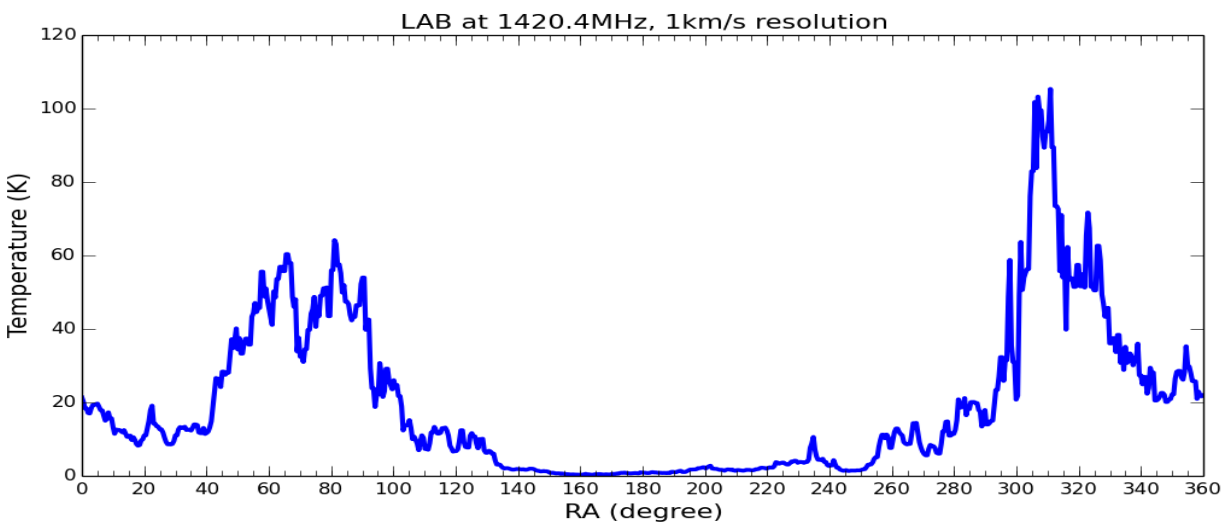
I calculate the std every 5 minutes

Cross check the Gain I get
from auto and cross
correlations, we can see
that $(G_i G_j)^{0.5} \sim G_{ij}$





FWHM~1.6 degree
compare to
 $1.22*0.2/10.7=1.3$ degree



Description the page above

- Blue: Auto correlation of one antenna, low FWHM.
- Red: Combination of auto and cross correlations, higher FWHM.
- Up: @1450MHz, less 21cm emission, first peak is Cygnus A, second peak is Cygnus X.
- Midium: @1420.4MHz, strong 21cm emission from the Galactic plane submerge the Cygnus A because of the low FWHM.
- Bottom: LAB data @1420.4MHz for comparison.

Final maps

CygA24h11mai15 is one day 24 hours observation, we just have one transition. However, we can add a special phase to the visibilities to simulate the case that turning the antennas to other declinations and observe.

