

# PAON4 : Noise and calibration

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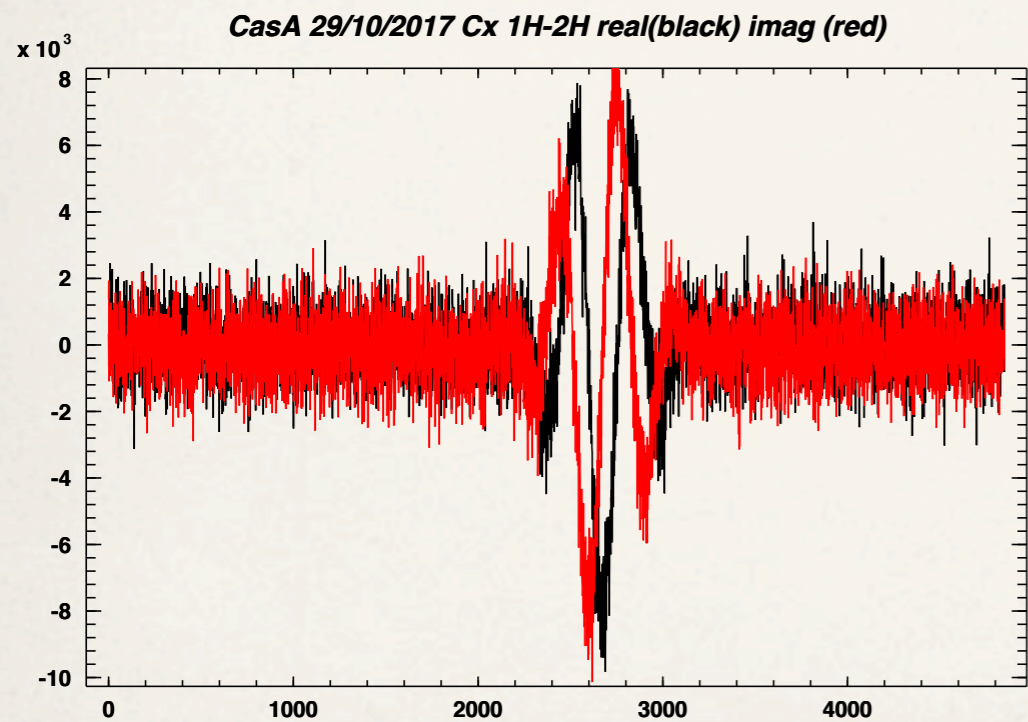
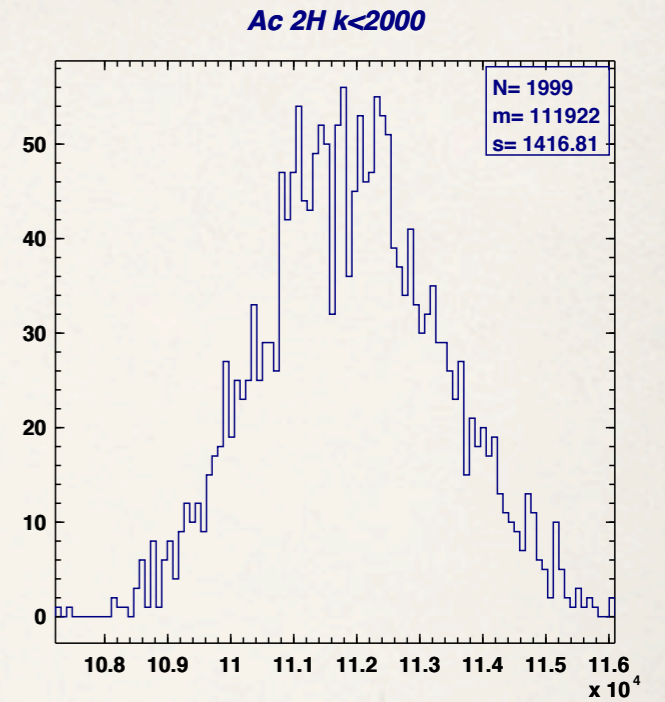
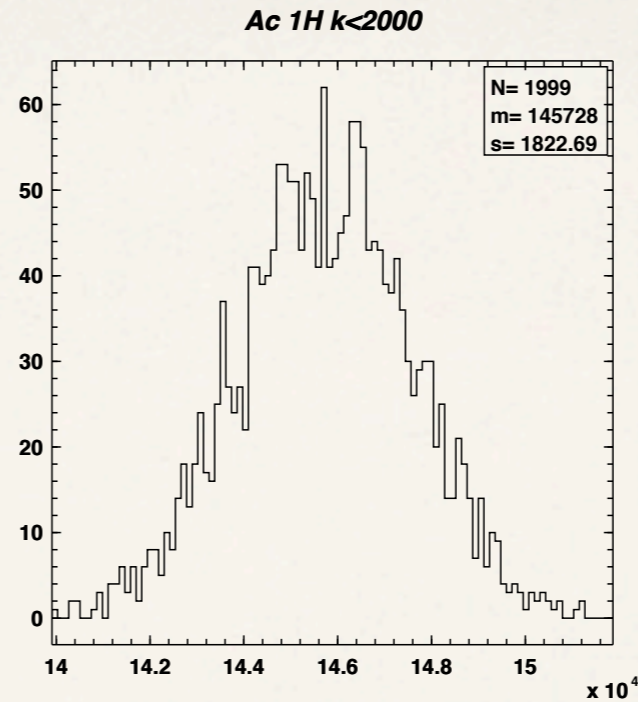
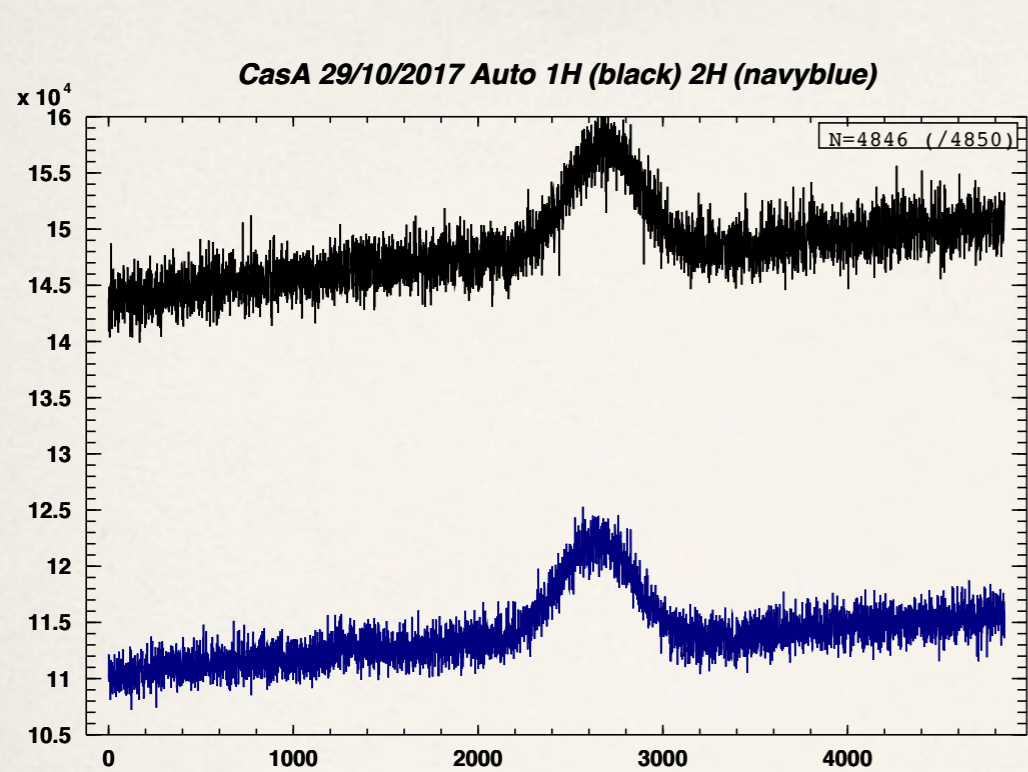
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*18 December 2017*

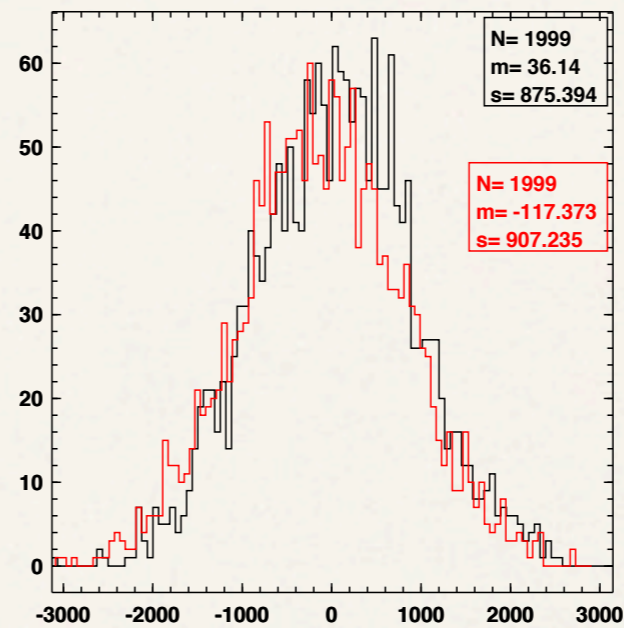
## Comparaison simulations et données CasA du 29 Octobre 2017

Visibilité	Simu-Mean	Simu-Sigma	Obs-Mean	Obs-Sigma
$V_{ii}$ NoSrc	$\sim 1.8 \times 10^4$	$\sim 1800$	$\sim 1.3 \times 10^4$	$\sim 1600$
Real/Imag $V_{ij}$ NoSrc	$\sim 0$	$\sim 1300$	$\sim 0$	$\sim 900$
$ V_{ij} $ NoSrc	$\sim 1600$	$\sim 800$	$\sim 1100$	$\sim 600$
$ V_{ij} $ WithSrc	$\sim 9100$	$\sim 1300$	$\sim 7000$	$\sim 1500$

TABLE 1 – Comparaison de la moyenne et écart-type des distributions des valeurs des auto-corrélations  $V_{ii}$  et cross-corrélations  $V_{ij}$  entre calcul/simulation simplifié et observations PAON4 CasA PAON4 du 29 Octobre 2017.



**Cx1H2H  $k < 2000$  real(black) imag(red)**



**ICx1H2HI  $k < 2000$  (black)  $2600 < k < 2900$  (blue)**

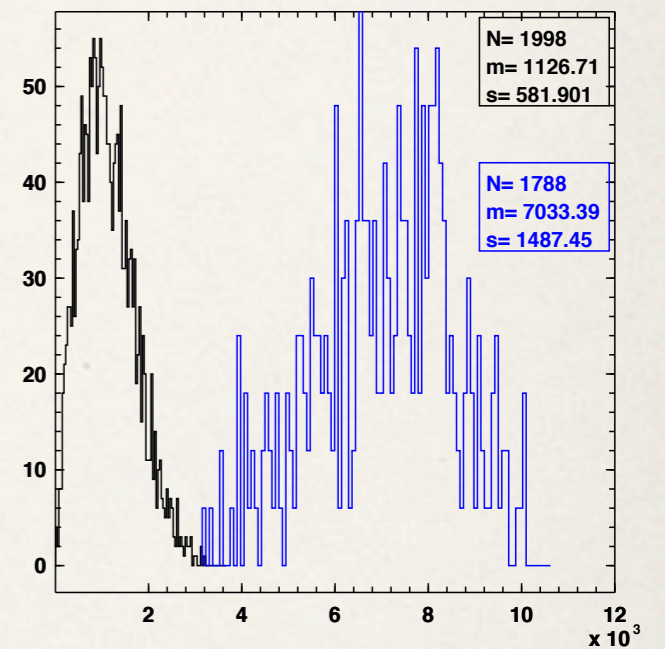


FIGURE 4 – CasA du 29 Octobre 2017 - **Haut** : Distribution des auto-corrélations avant et pendant le transit. **Bas** : Cross-corrélations 1H-2H , parties réelles et imaginaires à gauche et module à droite

# Ratio Sigma (fluctuations)/Power changing the integration time

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Data from CasA 25 November 2017

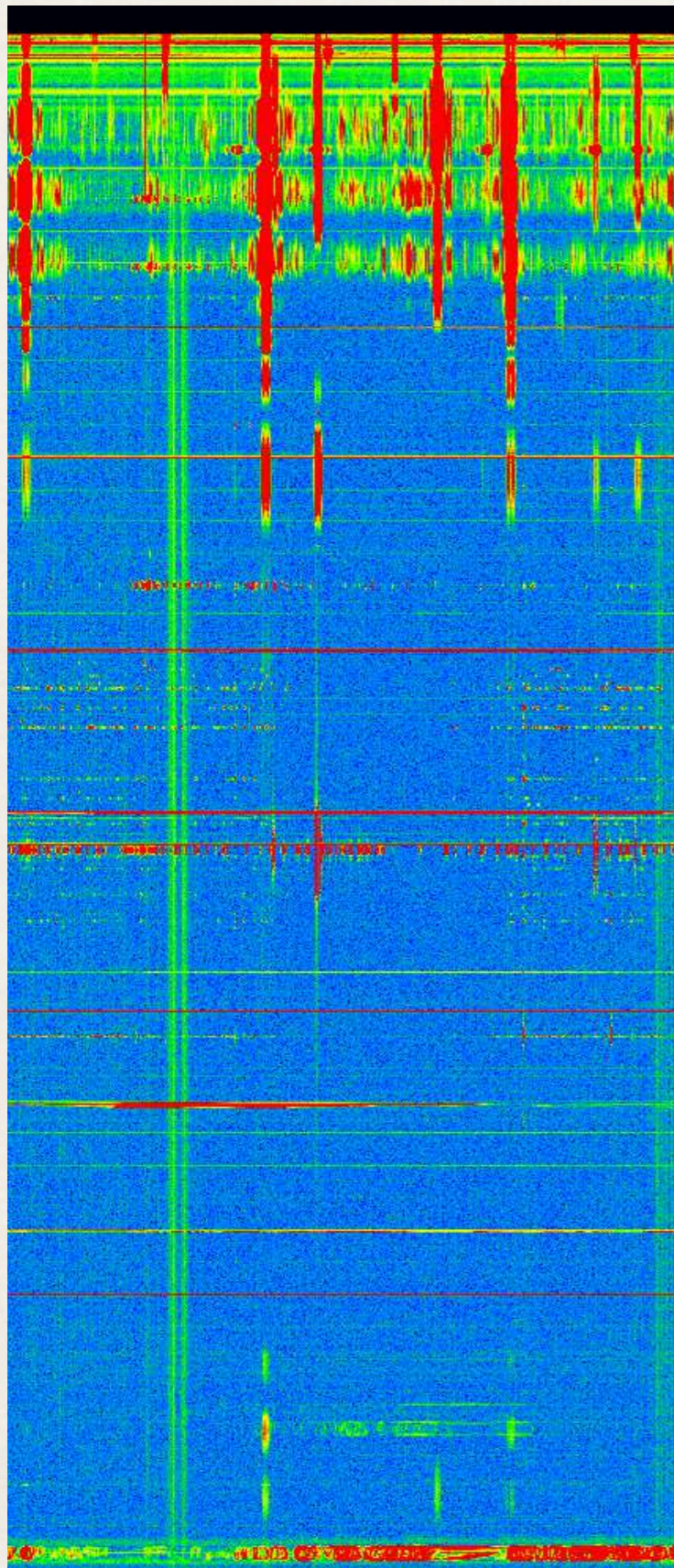
Changing the integration time from 3 s (10240 packets  $w=1$ ) to 12 s (40960 packets  $w=4$ ) and then to 48 s (163 840 packets  $w=16$ )

# ratio SigmaPower / AvgPower (w=16)

3H

3V

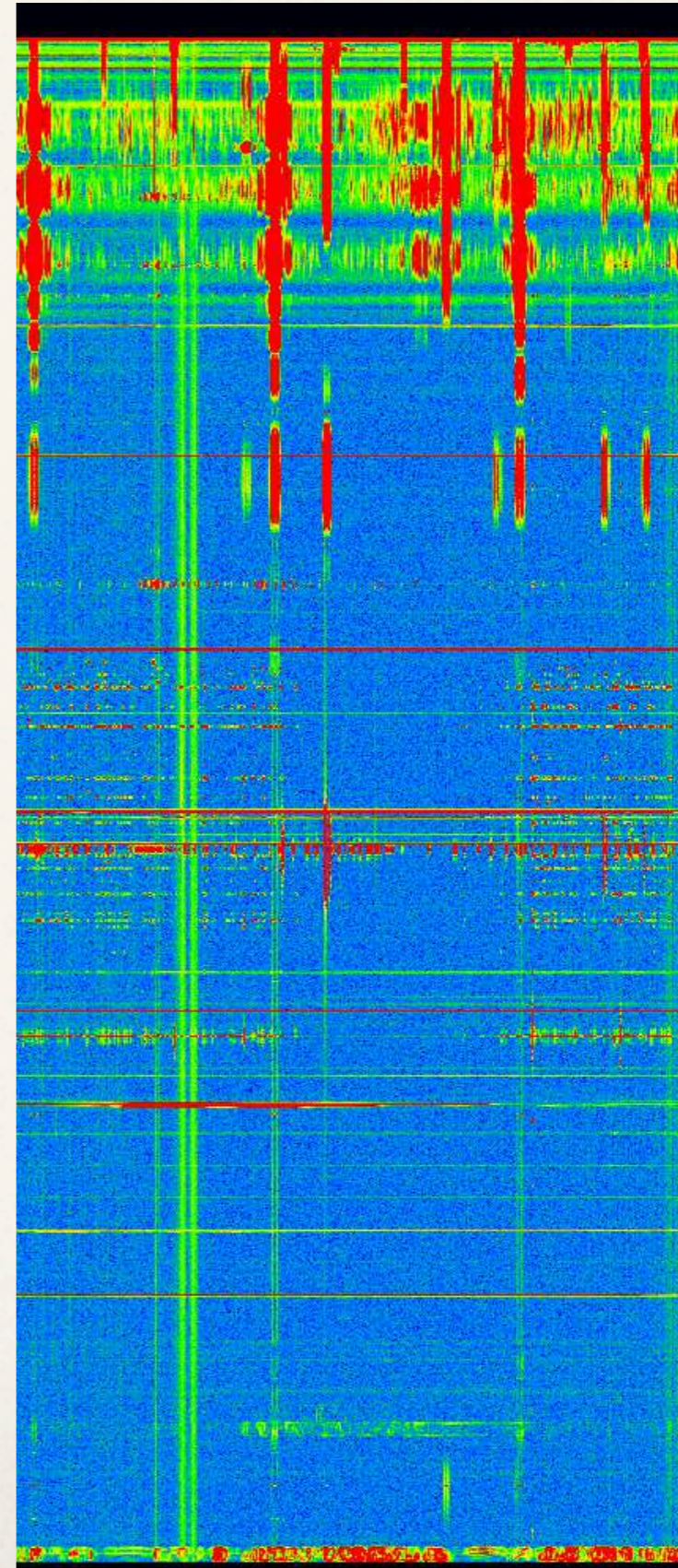
Time ( 24 hours)



1250 MHz



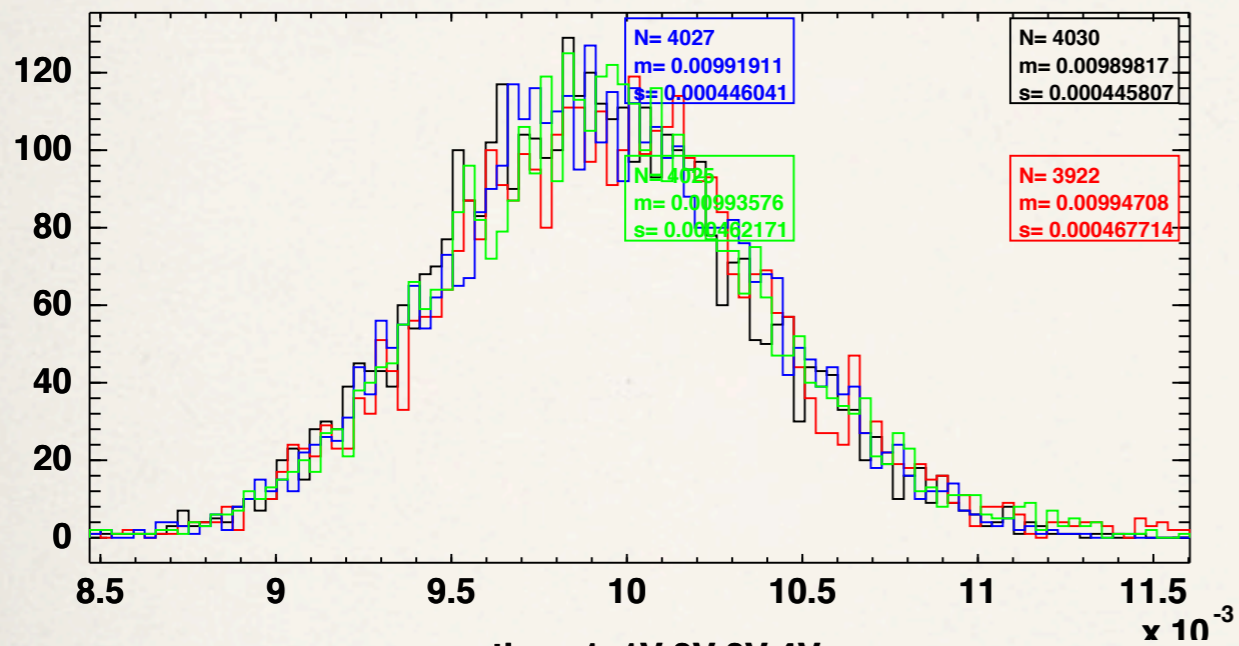
1500 MHz  
Frequency



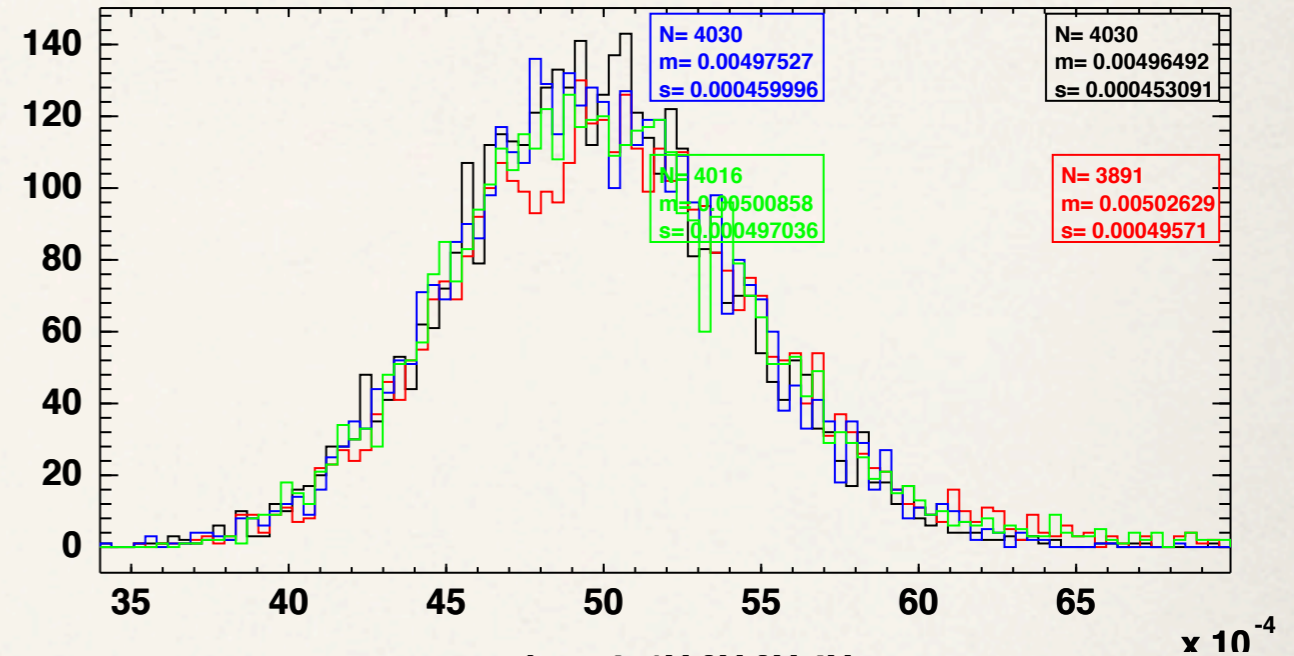
w=1 -> 10240 paquets

w=4 -> 40960 paquets

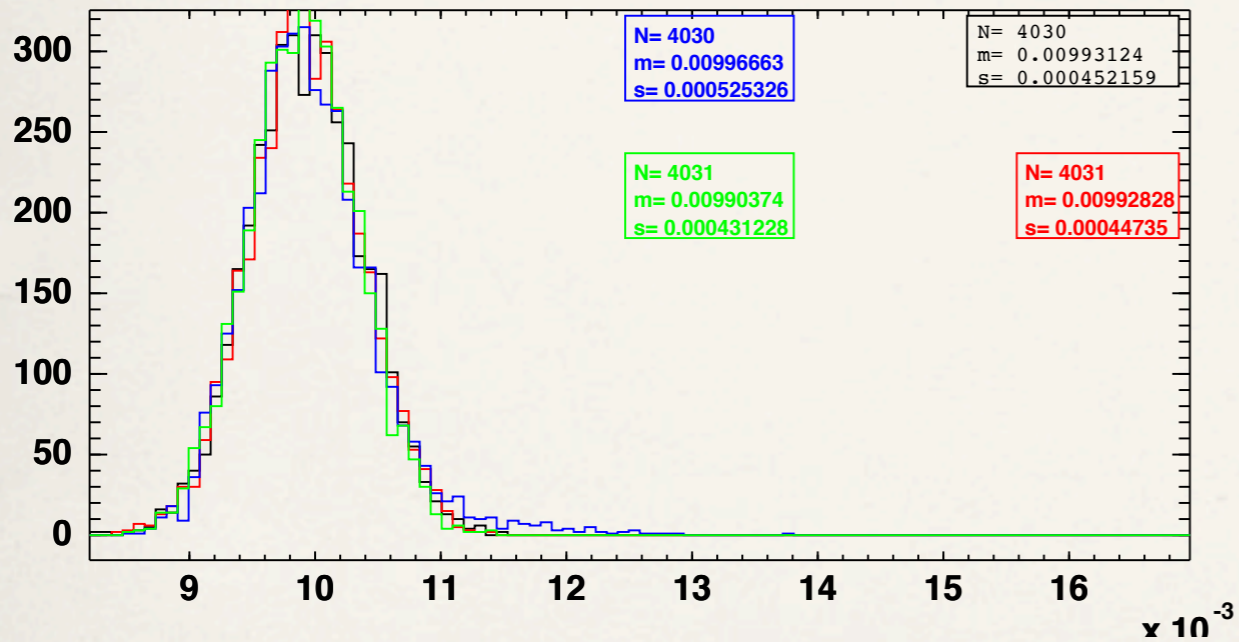
ratio\_w1 1H 2H 3H 4H



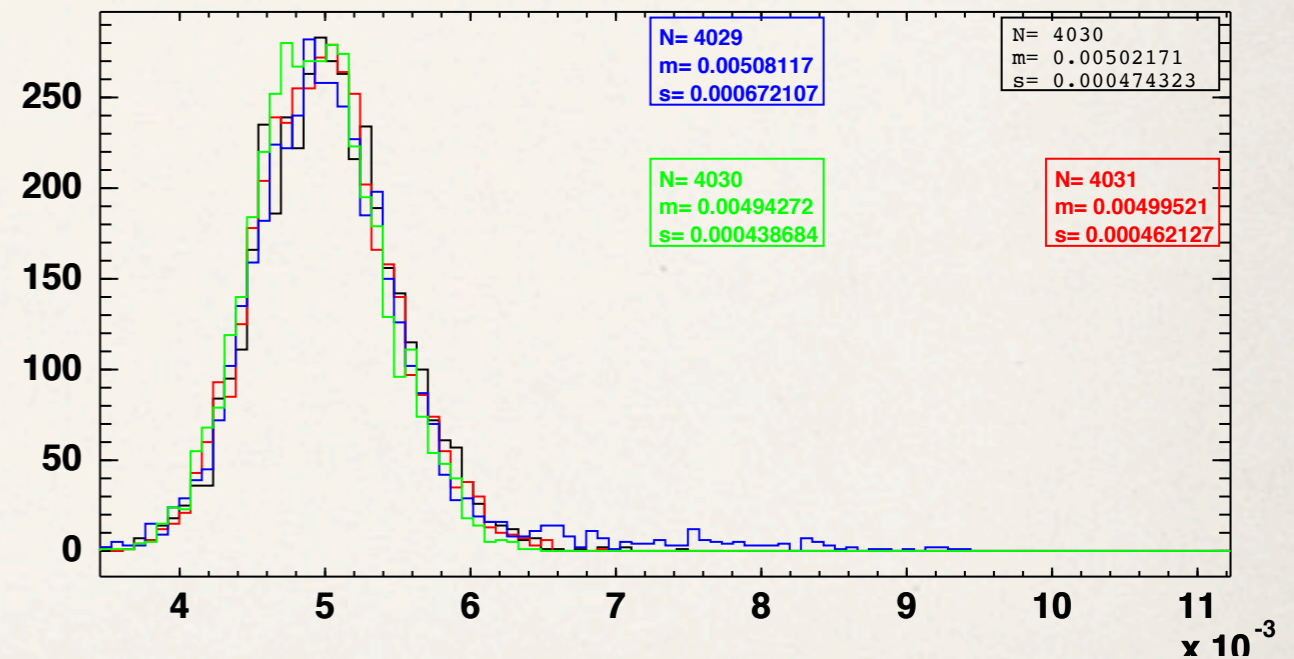
ratio\_w4 1H 2H 3H 4H



ratio\_w1 1V 2V 3V 4V



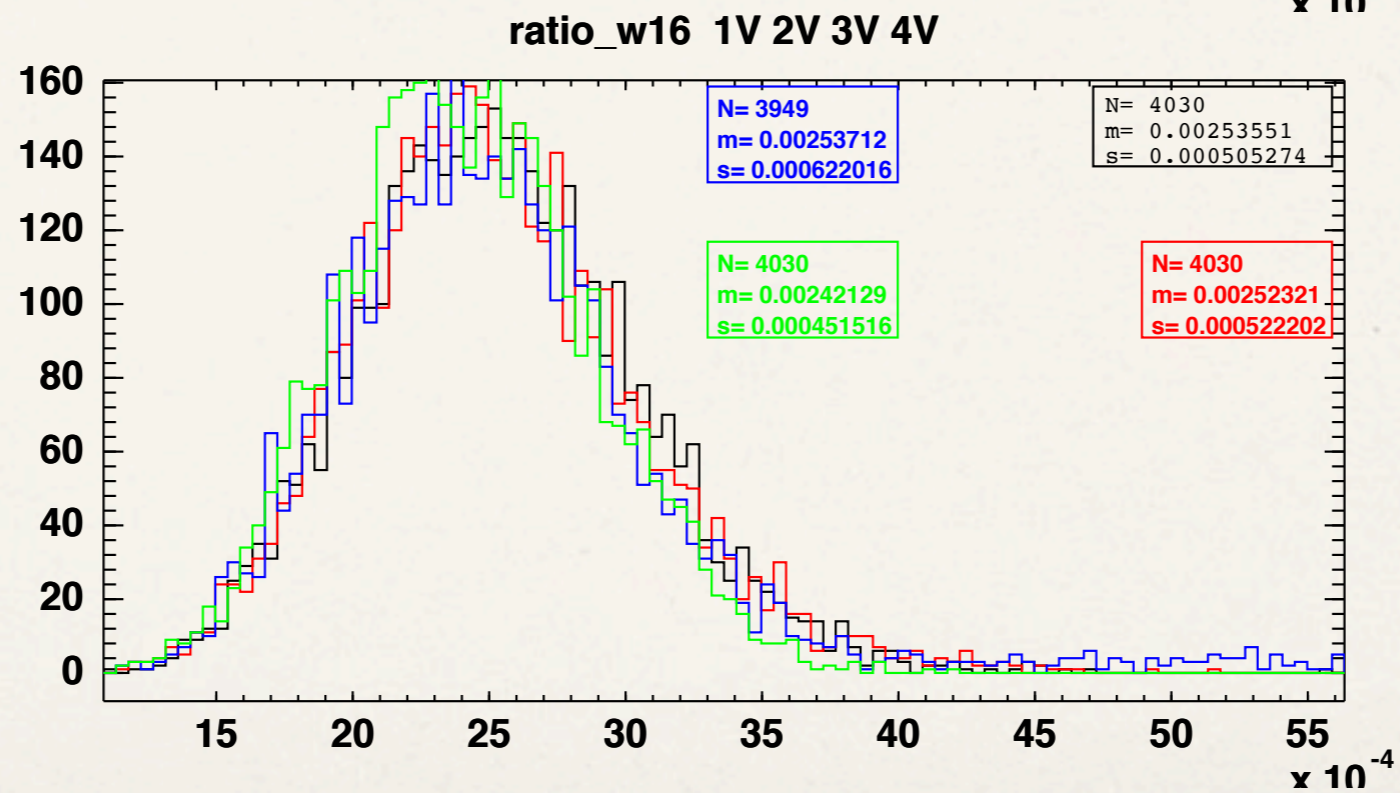
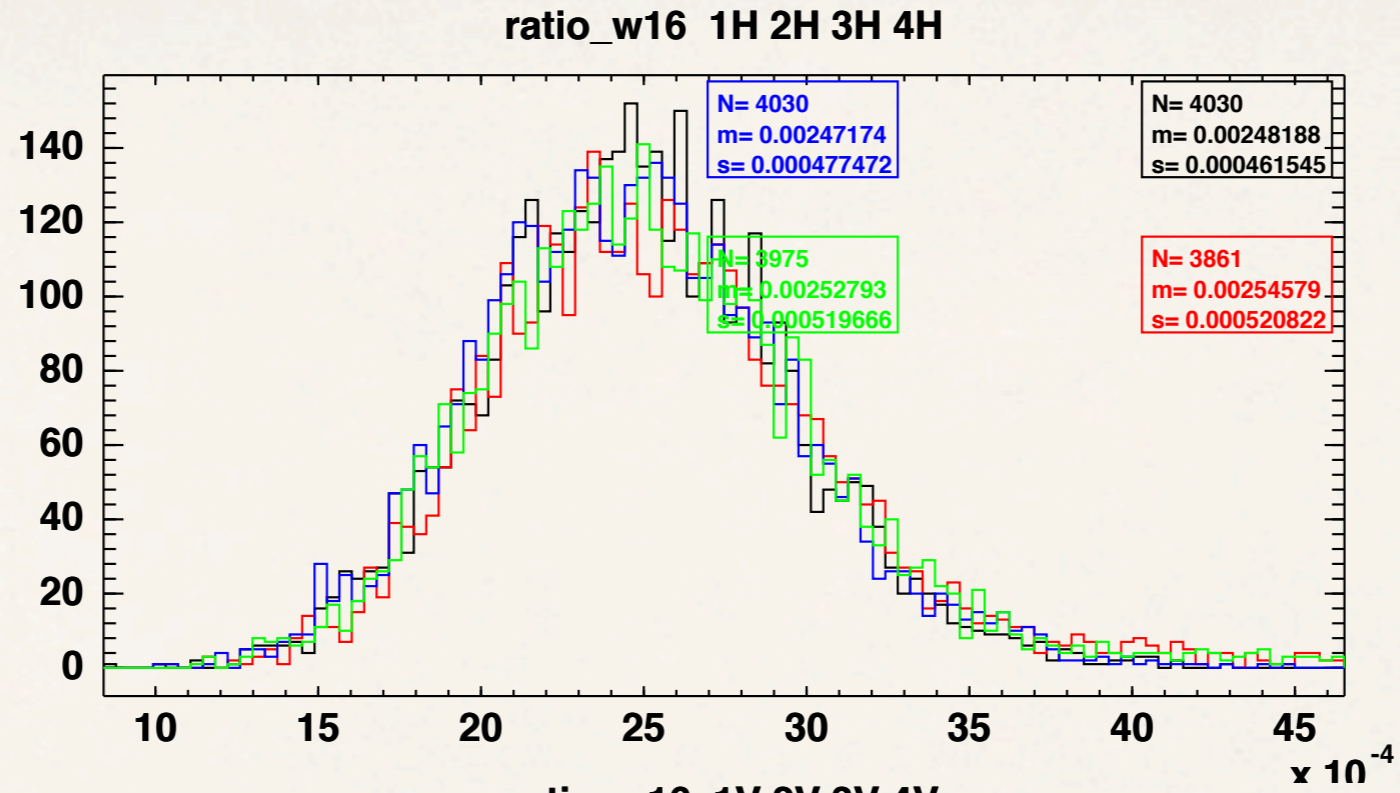
ratio\_w4 1V 2V 3V 4V



$\sigma \sim 1$  K

$\sigma \sim 0.5$  K

w=16 -> 163840 paquets



48 secondes, ~ 0.25 K