



# Legnaro report

## Items

- ◆ **Hall and production line status**
- ◆ **Chambers and SL review**
- ◆ **Gas tightness improvements**
- ◆ **Noise reduction**
- ◆ **Conclusions**



# Hall and production line status









## Planing for Phi2 table

- ◆ **5-Nov-01** Mount reference frames on Phi2
- ◆ **8-Nov-01** Start tuning Phi2 I-beam tool
- ◆ **15-Nov-01** Start test glue dispenser
- ◆ **22-Nov-01** Start production with Phi2

## Other activities

- ◆ **Final set up for SL test area ( ~ 1 month)**
- ◆ **Chamber assembling table**
- ◆ **Slow control for production and test areas**



# Chambers and SL review

## Built and tested

~~φ 01~~

φ 02

θ 01

φ 03

θ 02

φ 04

MB3 01

## Built

φ 05

θ 03

φ 06

## Under construction

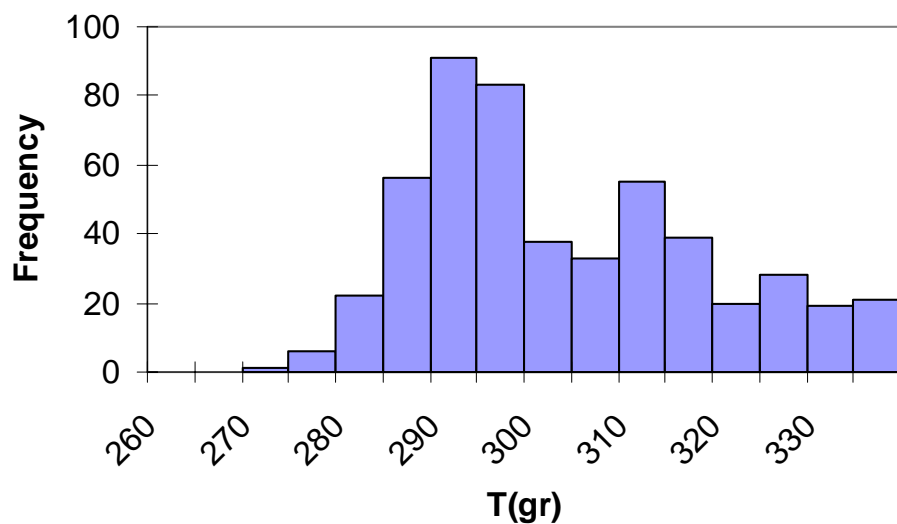
φ 07

θ 04

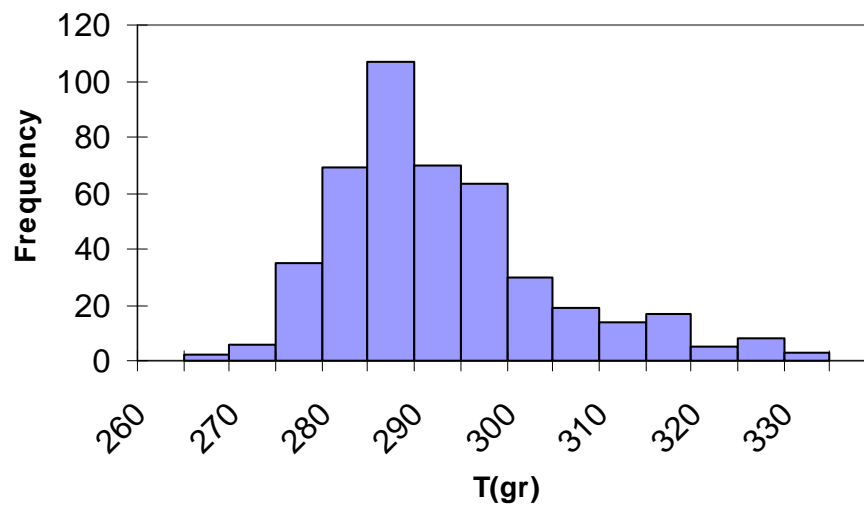


## Wire tension

Phi05 - Phi06



Theta02-Theta03



$$T = (f_o \cdot 2 L)^2 \cdot \mu$$

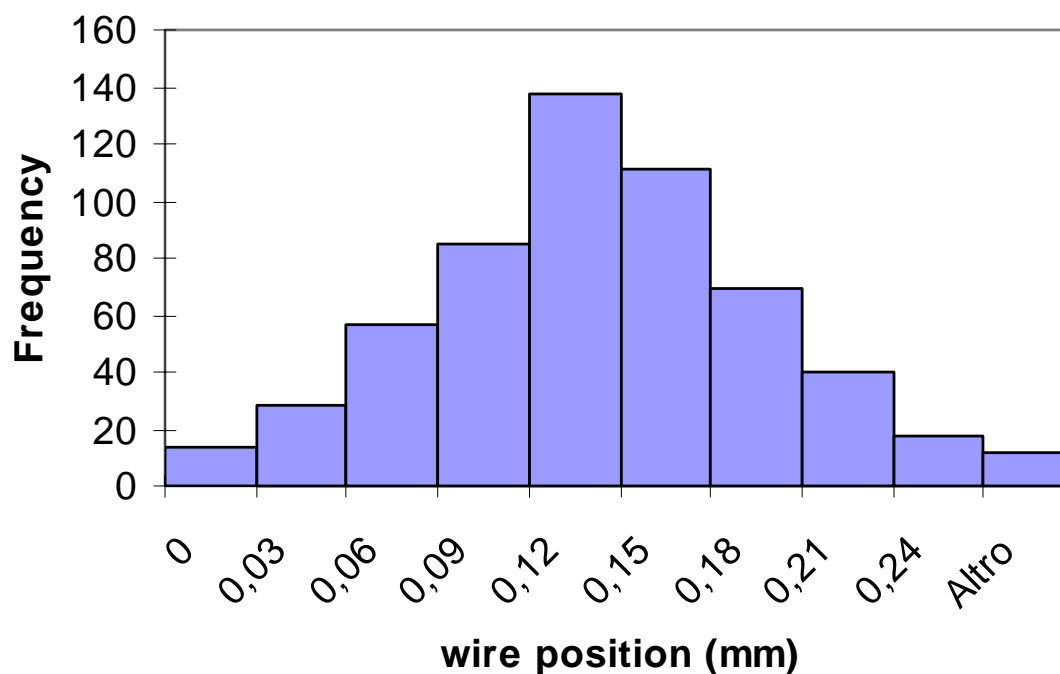
$$\mu = d \cdot \pi (\varnothing/2)^2$$

$$d^{\text{nicotine}} = 8.3 \text{ Kg/dm}^3 \quad \varnothing = 55 \mu\text{m}$$



## Wire position

Phi 05



**Same calibration file for every layers and both sides**  
**No Temperature correction (anyway within 2 ° C)**



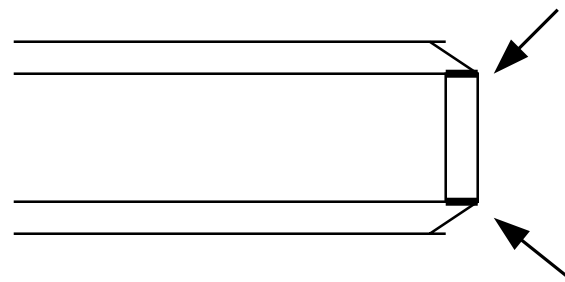


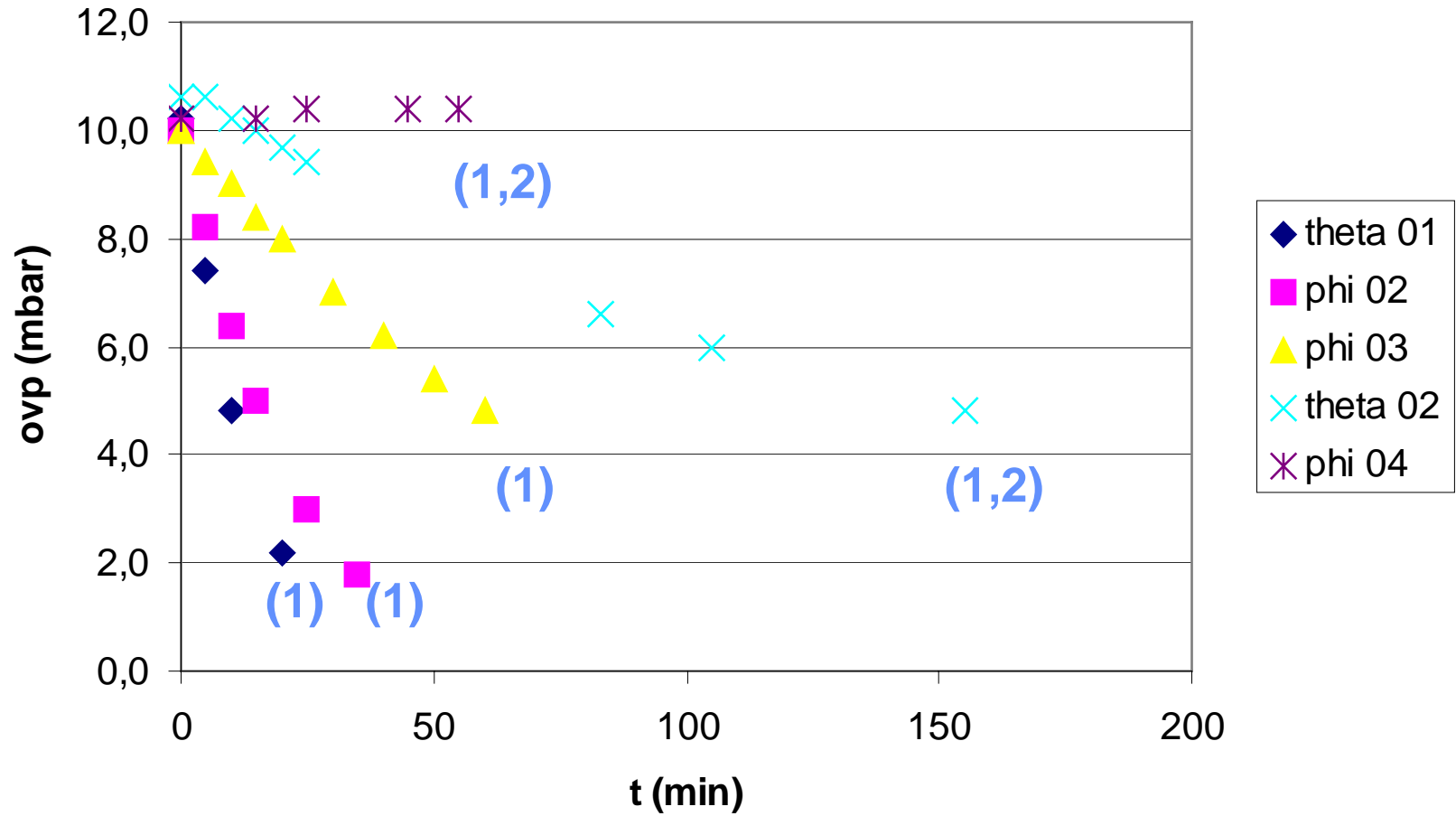
## Gas tightness improvements

**Solution to poor gas tightness are:**

**(1) - fill in with DP190 the feed-through pcbs on FE covers**

**(2) - fill in with DP190 the joints of the SL frames and carefully smooth the surface**







## Noise reduction

### Origin of noise on SL: power supply

- p.s. off at 3 fC noise = 0
- p.s. on (H.V.=0) at 3 fC noise  $\approx 10^4 \div 10^5$  (Hz/cell)
- noise concentrated in L2 and L3

### Solutions:

- clean up of internal HV cabling
- power supply noise reduction









## Power supply noise reduction:

### SY 1527

- internal layout optimized
- additional filtering of H.V. outputs can be included in H.V. modules (by CAEN)

### SY 527

- external filtering to be added

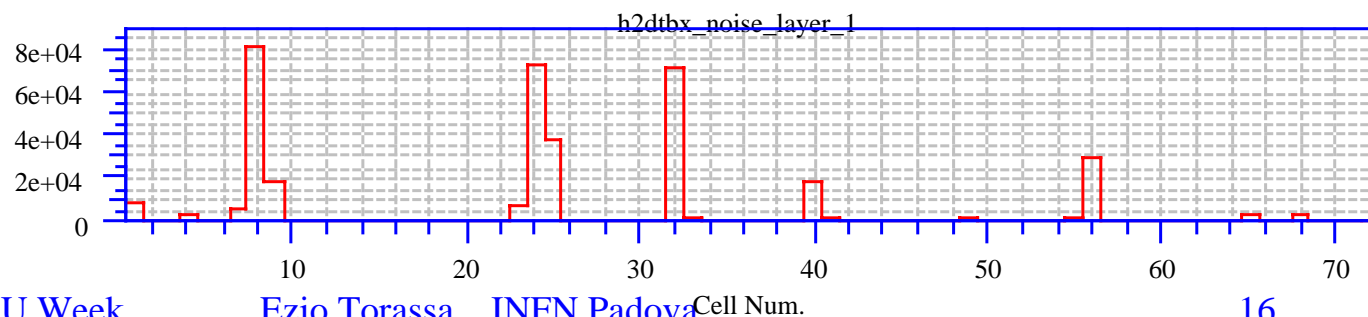
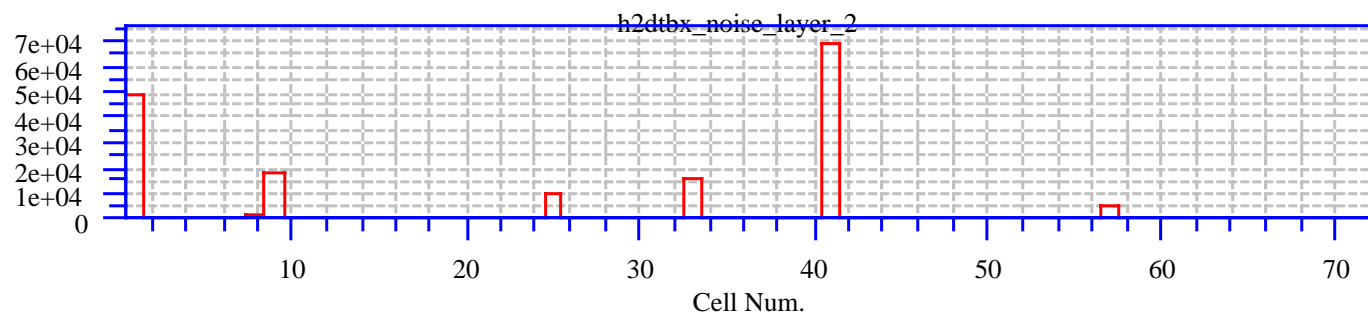
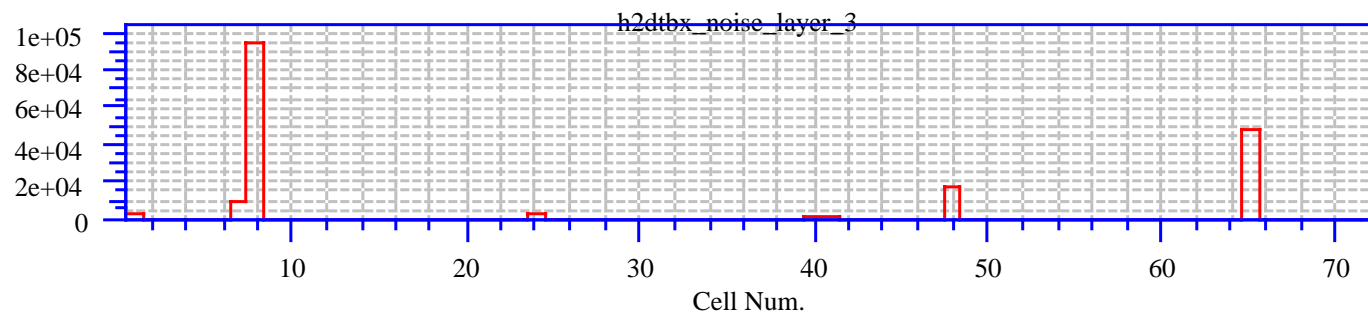
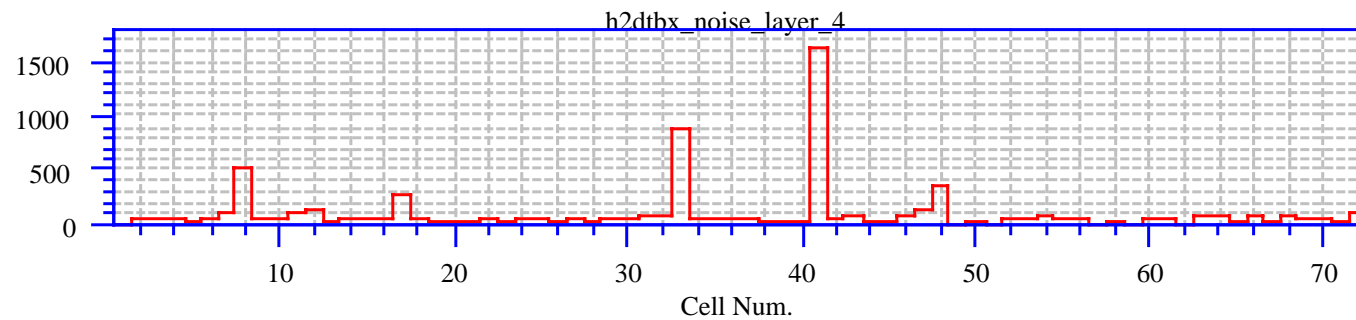
note:

final modules with filters will absolutely require racks 90 cm in depth



Filters NO  
Thr. = 3 fC

Noise (Hz/cell)

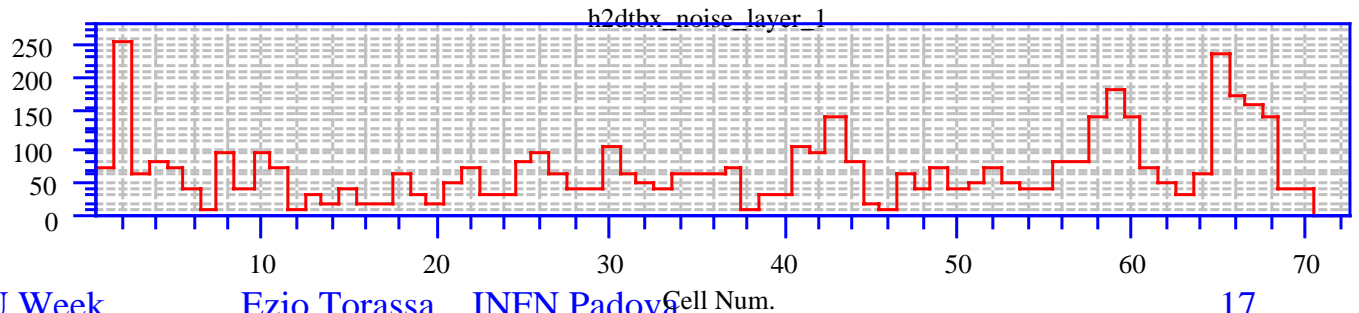
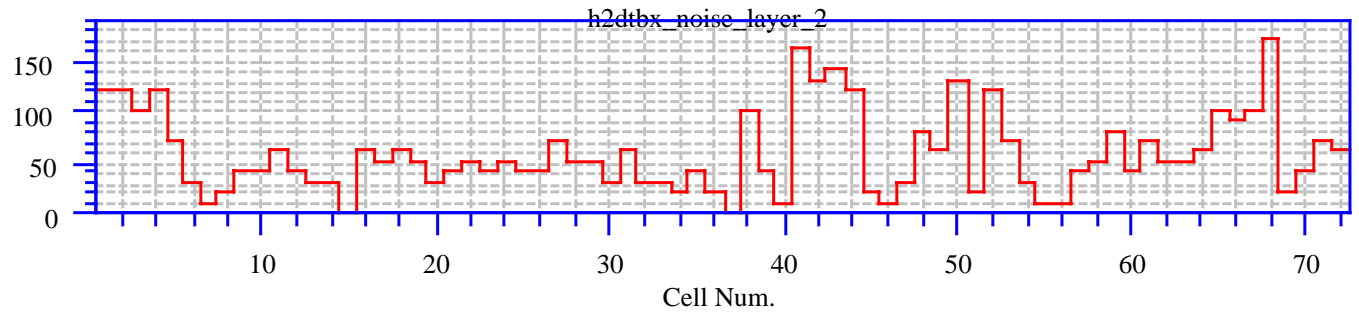
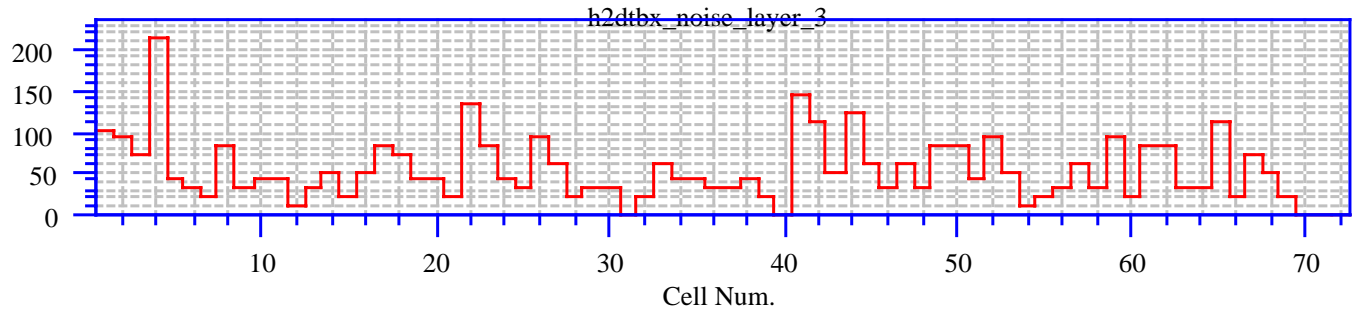
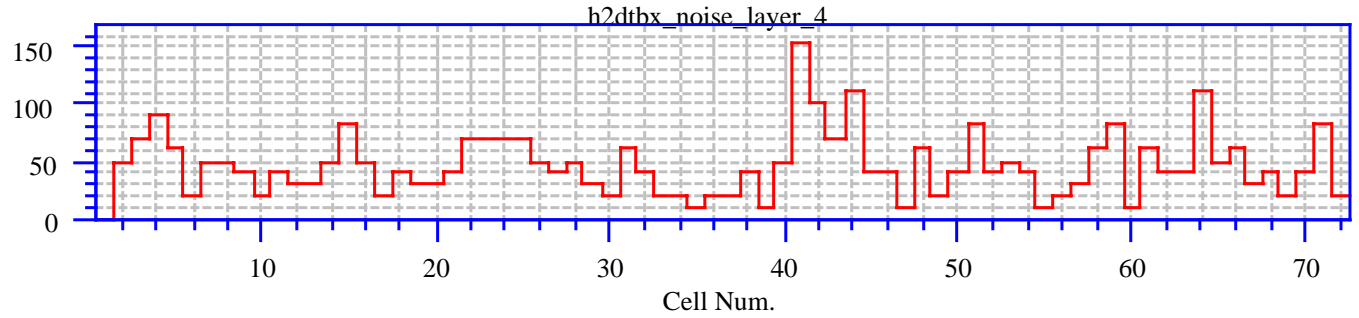






Filters NO  
Thr. = 5 fC

Noise (Hz/cell)

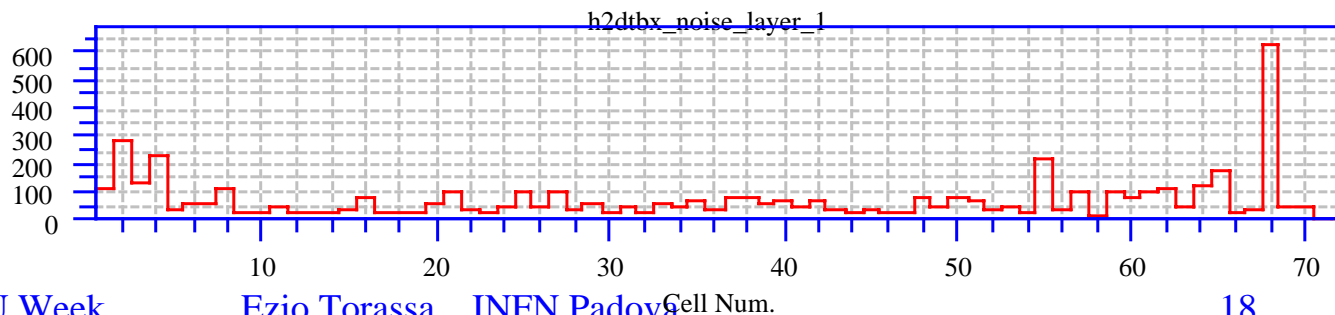
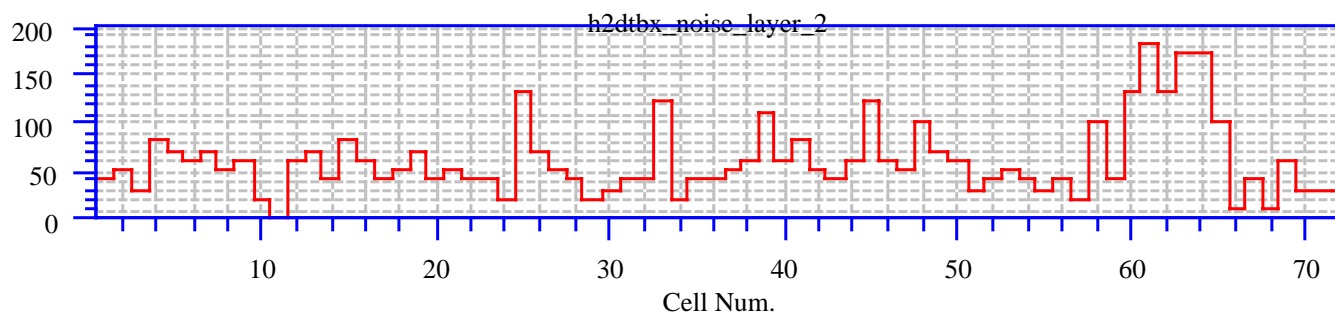
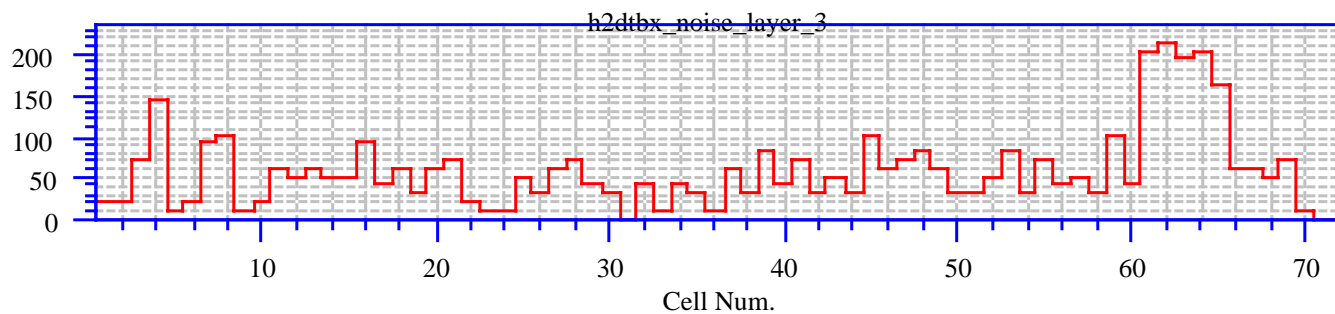
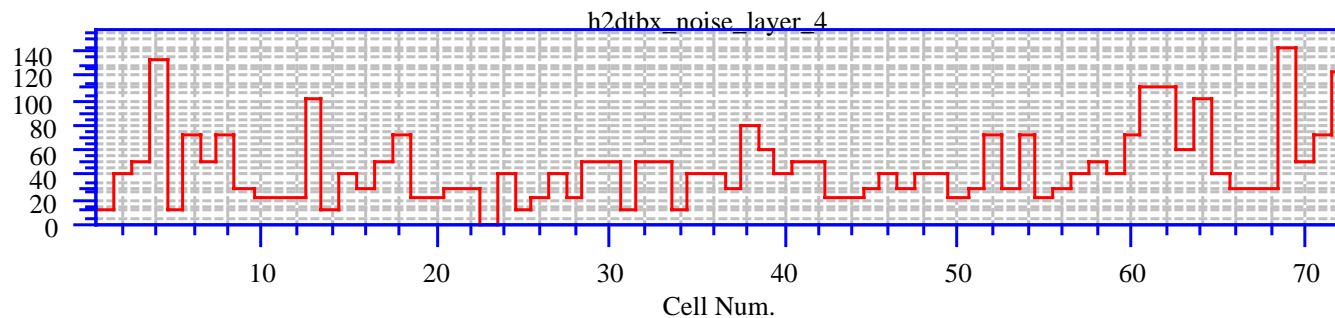




Filters YES

Thr. = 3 fC

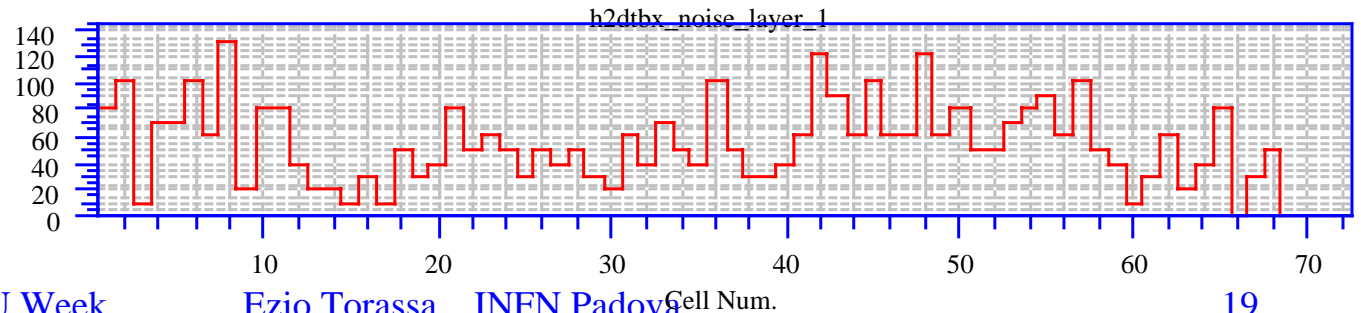
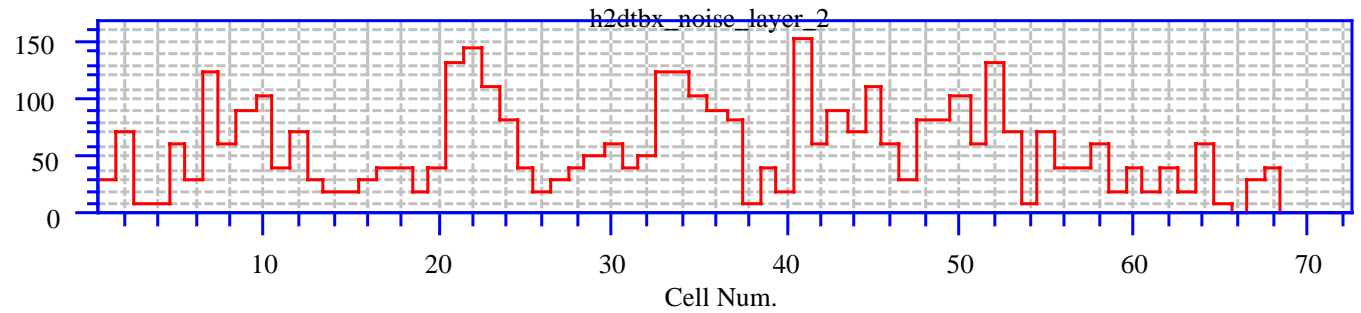
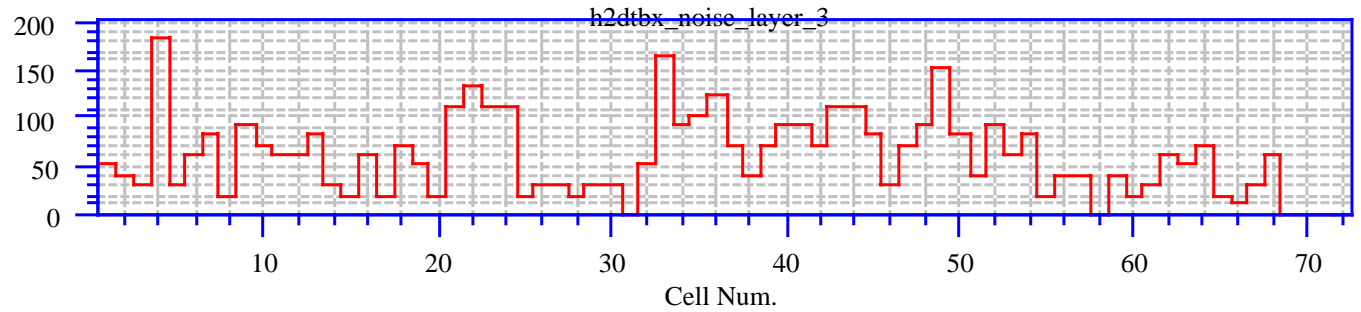
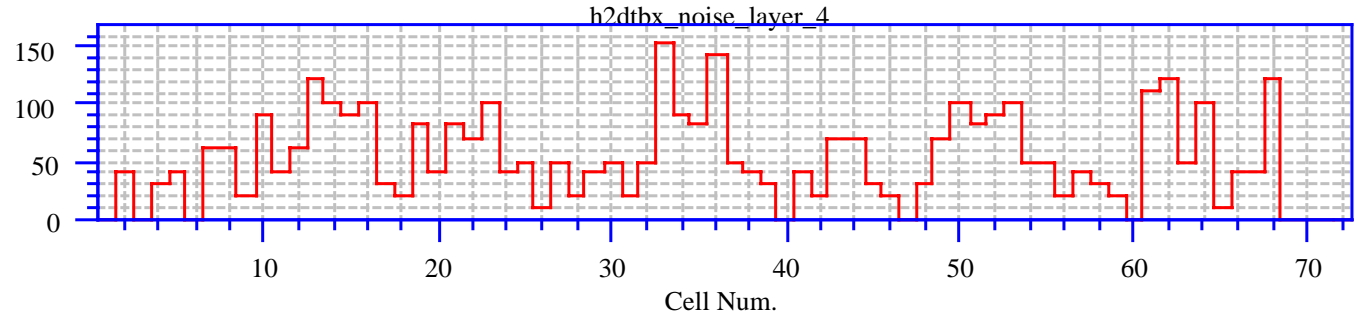
Noise (Hz/cell)





Filters YES  
Thr. = 5 fC

Noise (Hz/cell)





## Conclusions

- **Production at LNL started with good rate and quality with  $\theta$  and  $\varphi_1$  tables,  $\varphi_2$  will start end November**
- **Tool to handle and store Al-plates is working**
- **Noise and gas tightness improved, ovp test from optional to mandatory if we will work with absolute pressure**