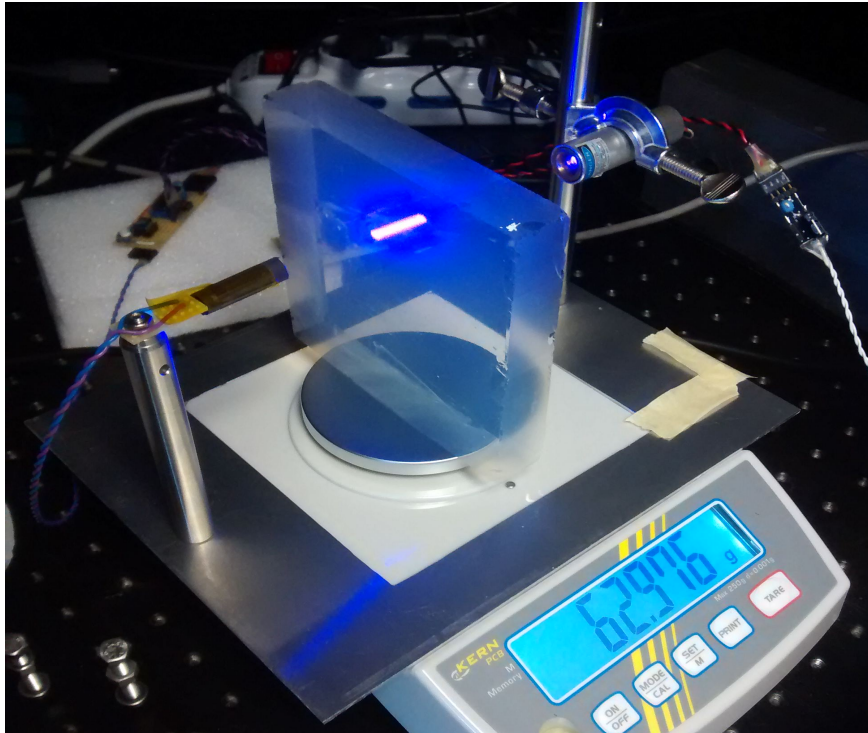


CLAS12-RICH Aerogel Tests

May 5th 2015





AEROGEL:

Evgeniy visit to Ferrara: April 13-17

- report on the production
- compare optical characterization
- verify handling and operation procedures

Production:

- first production tile delivered at Ferrara in April 2015 ✓
- first delivery expected at JLab in June 2015
- procurement of a dry cabinet for storage ongoing



SPHERICAL MIRRORS:

Visit to CMA: April 9-10

- refine cost evaluation for mirrors and support (in line with management plan)
- production plan (14 months starting this summer)

CMA Demo n.2 delivered ✓

- LHCb quality from wavefront sensor at CMA (during visit)
- Spot image < 1 mm at Frascati (this week)



PLANAR MIRRORS:

Media-Lario:

- Repolishing of mandrel next week
- Start 1st mirror production (final layout)
- Producing samples for epoxy glue radiation tolerance tests



MECHANICS:

Purchasing tender expired last week

- one (only) company fulfill the tender requirements ✓
- core-business: aero-space technology (i.e. Boeing)
- specialized on honeycomb + Al/CFRP light and stiff sandwiches



INSTALLATION:

Assembling room:

- space and services being defined with JLab (Walt ...
 - RICH module (crane, transportation)
 - Electronic panel (power supply + air for cooling tests)
 - Mirror (dark room)



ELECTRONICS:

Front-end prototypes:

- generic configuration + analysis software under development
- MAROC3 + FPGA tests ongoing
- firmware being upgraded in parallel

Aerogel Production

Критерий отбора:

$$L_{sc} > 43; A_0 > 0.95; 1.048 < n < 1.052 \{0.224 < \rho < 0.244\} n^2 = 1 + 0.438\rho$$

№	Experiment	Density ρ , g/cm ³	Scattering length L_{sc} , mm	A_0 , %	Date of measurement (L_{sc})	$K_p \pm 0.2$
1	оп397ф15	0.237	49.56±0.79	99.04±0.4	19.12.14	1.7
2	оп397ф16	0.233	47.67±1.19	97.77±0.9	23.12.14	1.5
3	оп397ф10	0.234	49.2±1.54	97.73±0.9	28.12.14	1.5
4	оп397ф	0.234	48.2±0.63	92.98±0.5	28.12.14	1.4
5	оп397ф33	0.237	51.32±1.28	98.91±0.6	29.12.14	1.5
6	оп398ф3	0.228	40.93±0.51	98.35±0.7	20.01.15	
7	оп397ф40	0.246	46.12±0.58	97.84±0.5	20.01.15	0.9
8	оп397ф9	0.241	46.87±0.8	96.66±0.4	20.01.15	1.5
9	оп398ф6	0.238	41.56±0.52	97.90±0.9	20.01.15	
10	оп398ф4	0.233	43.3±1.2	98.75±0.4	26.01.15	
11	оп398ф13	0.236	47.05±1.34	98.76±0.5	26.01.15	1.5
12	оп398ф31	0.237	51.28±1.31	99.54±0.5	04.02.15	1.7
13	оп398ф32	0.234	48.09±1.26	97.75±0.6	04.02.15	1.5

Surface Planarity

оп397φ10

Max difference 0.9 mm

13.1	13.0	12.8	12.8	12.7	12.8	12.9
13.1	12.9	12.7	12.6	12.7	12.6	12.8
12.9	12.7	12.5	12.5	12.4	12.6	12.7
12.8	12.8	12.4	12.4	12.3	12.4	12.5
	12.7	12.4	12.5	12.3	12.5	12.6
12.9	12.8	12.3	12.4	12.4	12.5	12.8
13.2	12.9	12.7	12.4	12.5	12.8	13.0

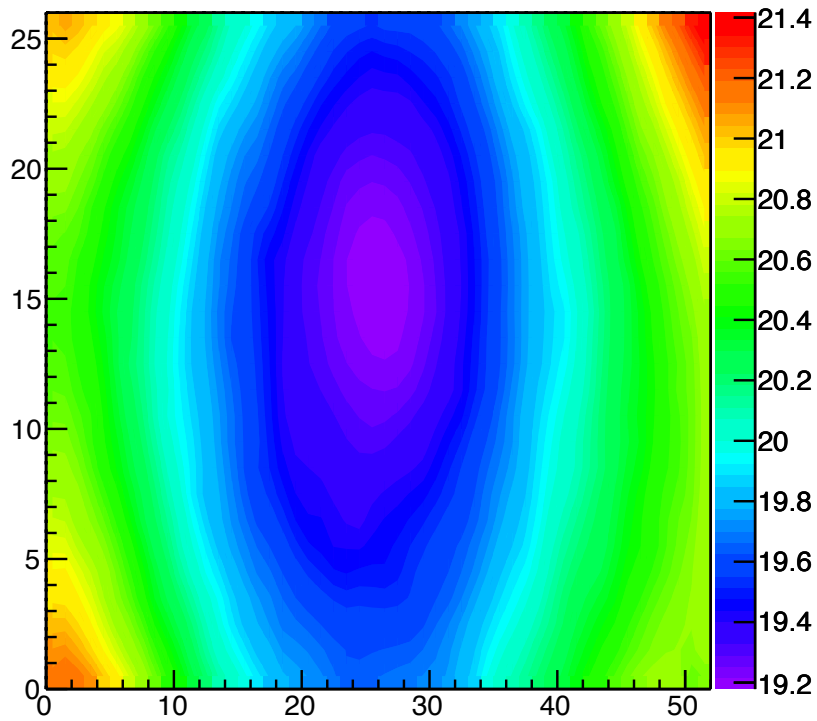
оп398φ3

Max difference 3.2 mm

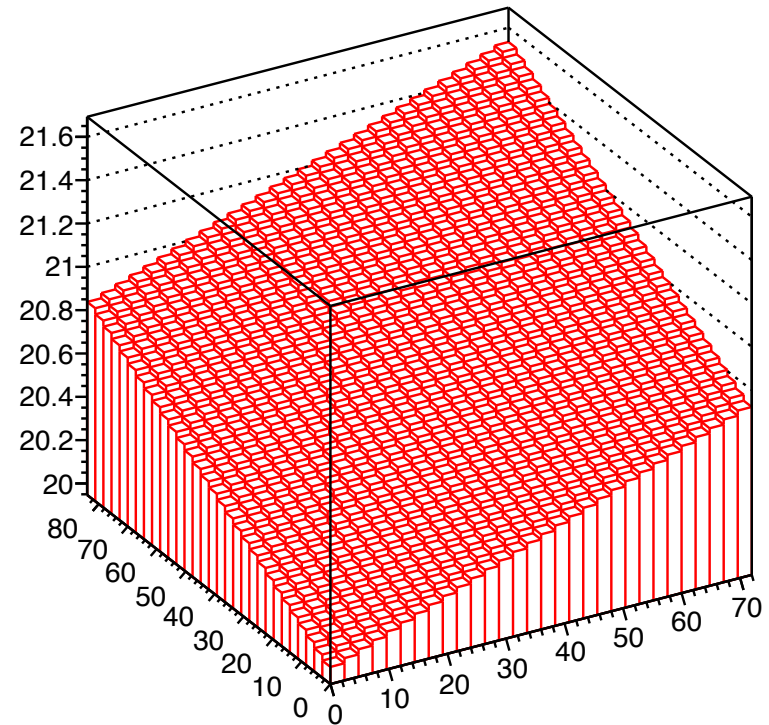
14.2	13.2	11.4	12.2	12.5	13.2	14.0
13.1	12.5	11.9	11.7	11.9	12.4	13.1
12.4	12.0	11.5	11.2	11.3	11.7	12.4
12.2	11.8	11.4	11.0	11.0	11.4	11.9
	12.0	11.5	11.4	11.4	11.6	12.1
12.8	12.5	12.1	11.8	11.8	12.1	12.8
13.4	13.0	13.4	12.2	12.2	12.7	13.6

Surface Planarity 398m3

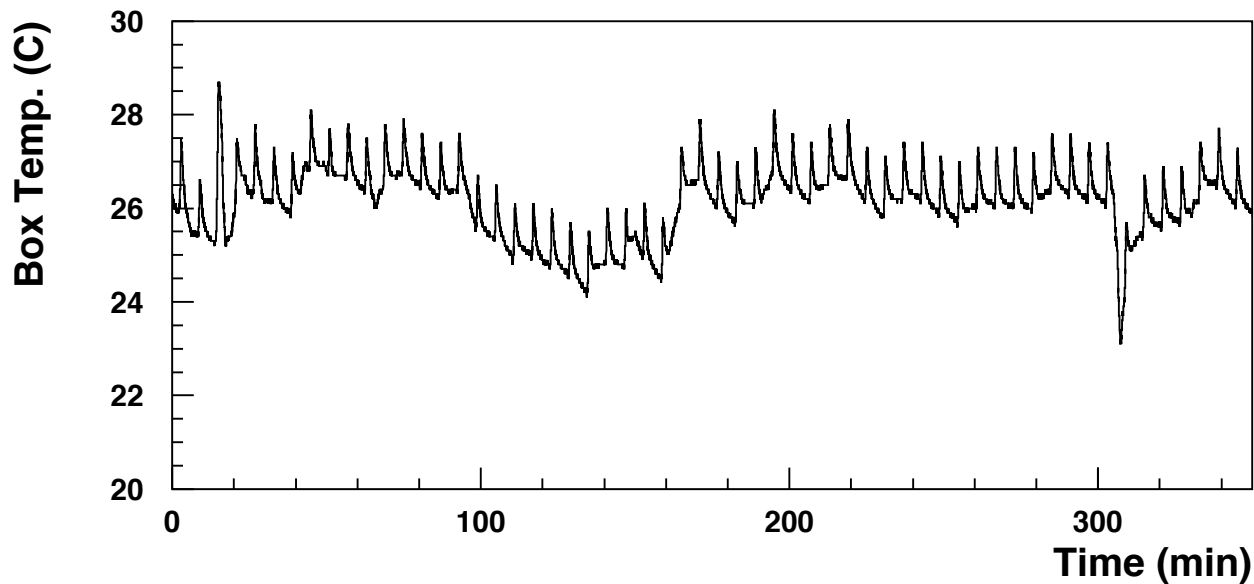
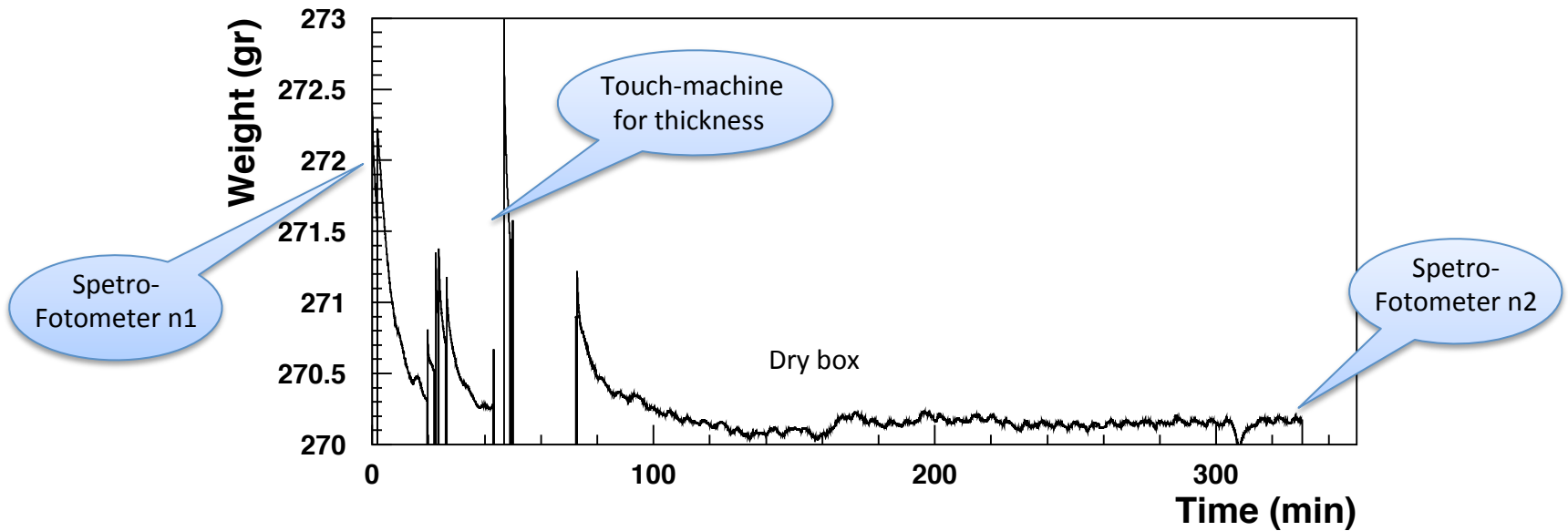
h2



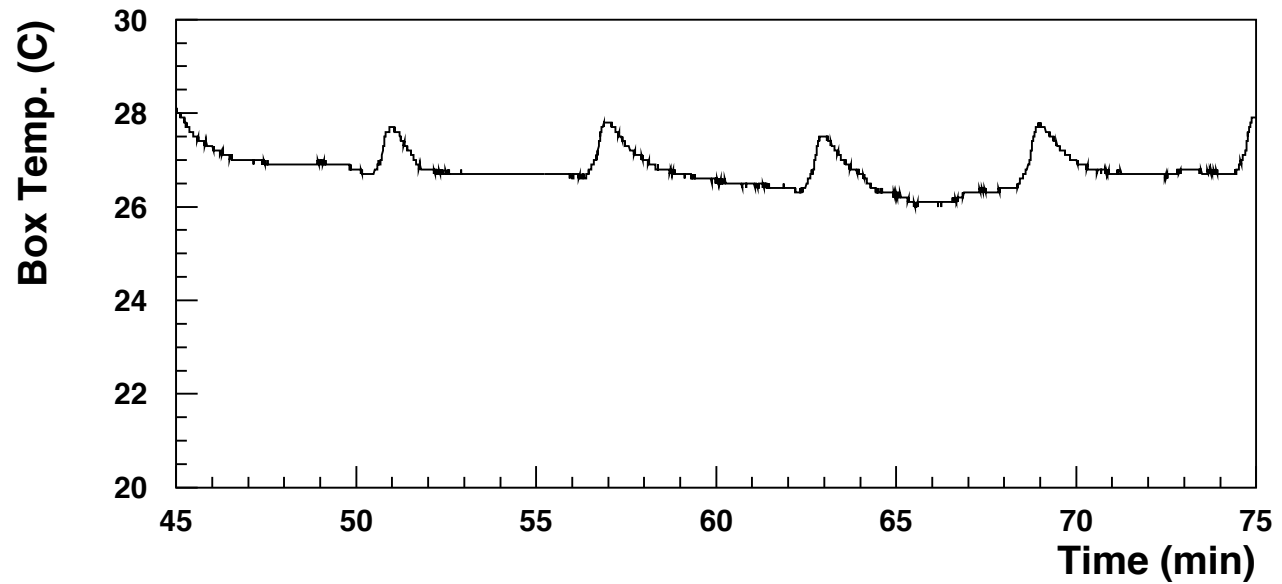
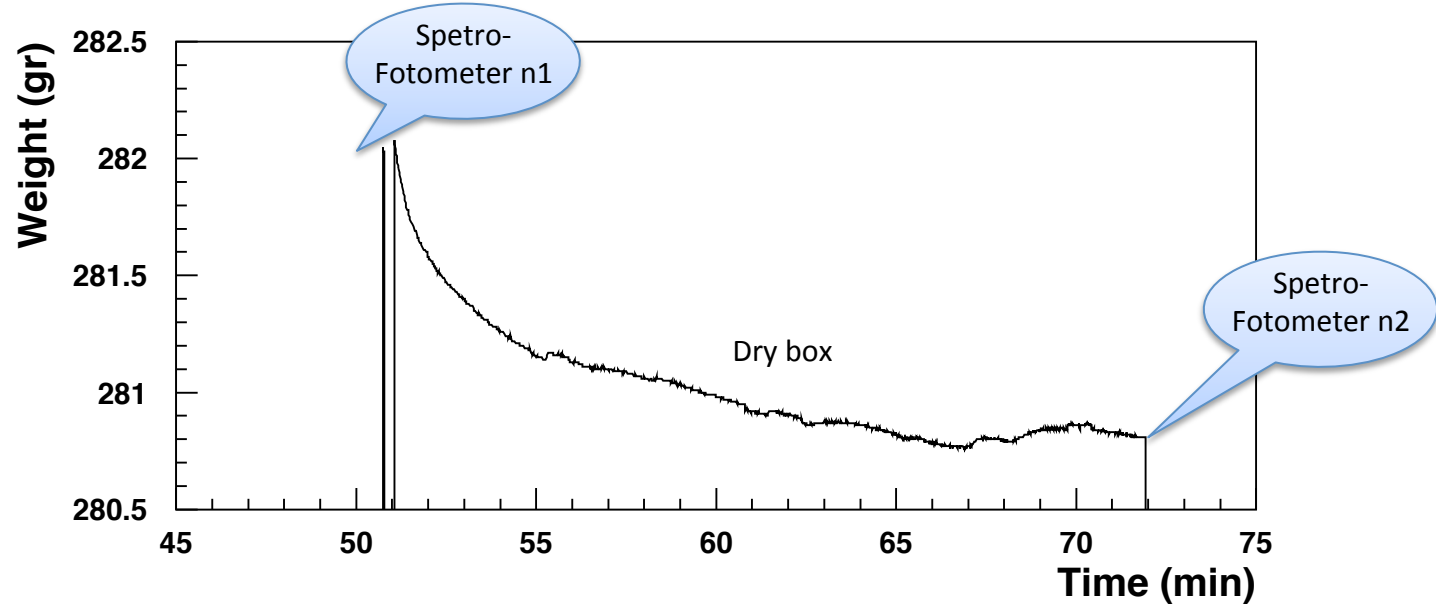
$[0]*x+[1]*y+[2]$



NOV 398 m3



NOV 397 m10



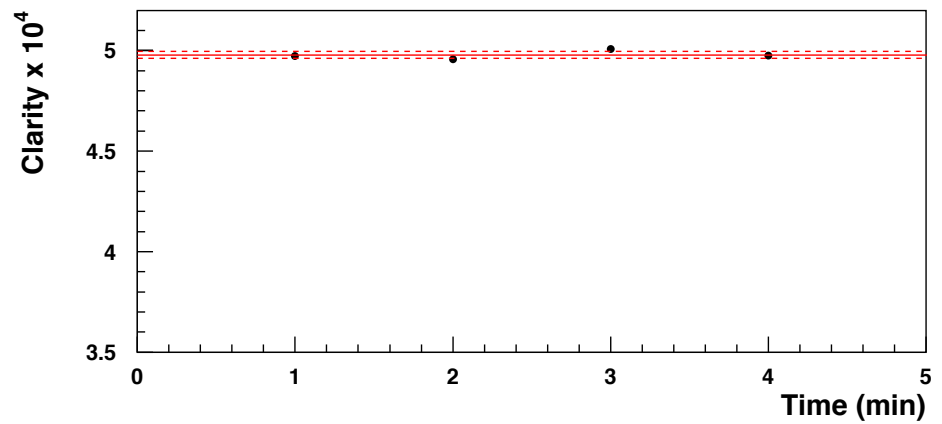
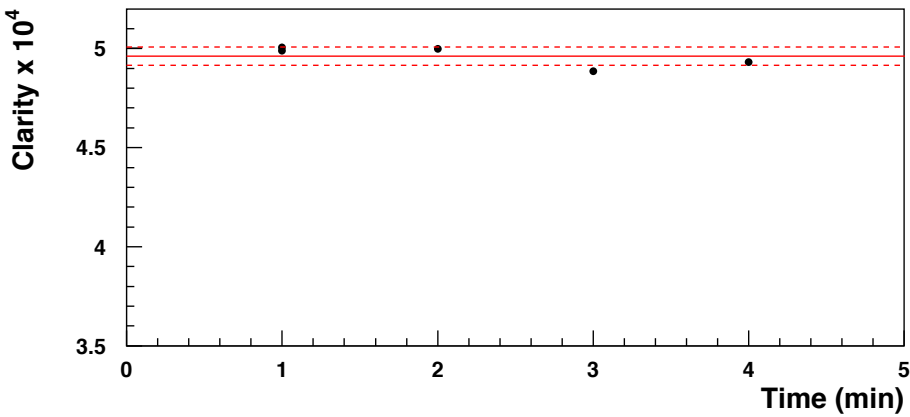
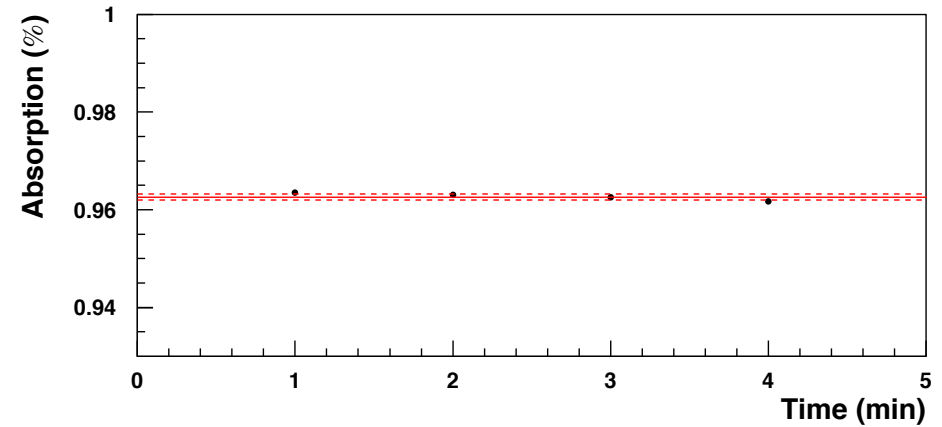
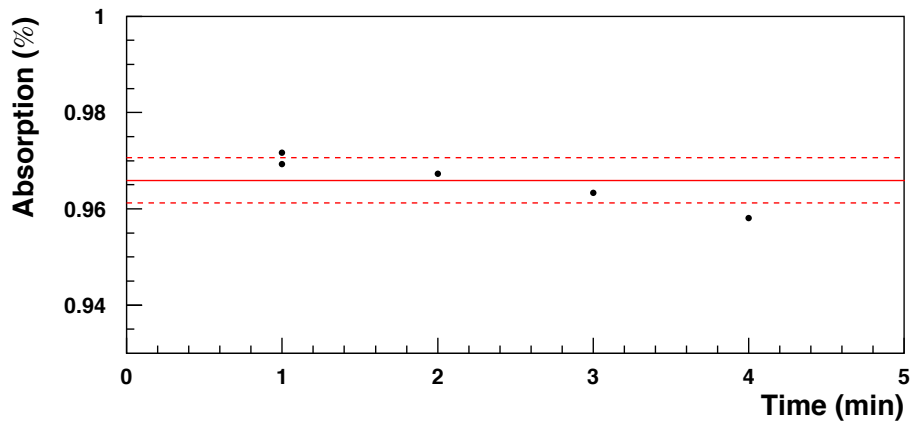
Aerogel Characterization

		Novosibirsk	Fe re-fit	Ferrara 1	Ferrara 2
	Date Meas.	28 Dec 2014	28 Dec 2014	16 Apr 2015 after delivery	17 Apr 15 after -1day drying
397m10	Lsc (mm)	49.2 ± 1.5	48.46 ± 0.50	45.59 ± 0.38	45.99 ± 0.39
	Abs (%)	97.7 ± 0.9	98.06 ± 0.61	95.60 ± 0.98	95.60 ± 1.06
	Date Meas.	20 Jan 2015		14 Apr 2015 after delivery	28 Apr 15 after 10-day drying
398m3	Lsc (mm)	40.93 ± 0.51		37.35 ± 0.47	37.59 ± 0.47
	Abs (%)	98.35 ± 0.7		96.37 ± 1.41	96.50 ± 1.36
	Date Meas.	28 Dec 2014	28 Dec 2014		
397m0	Lsc (mm)	48.20 ± 0.63	48.01 ± 0.42		
	Abs (%)	92.98 ± 0.5	93.05 ± 0.37		
	Date Meas.		22 Apr 2015 after trip to Novo	16 Apr 2015 pre-baking	17 Apr 15 after baking
NOV LNF2 t1	Lsc (mm)		49.79 ± 0.18	44.64 ± 0.63	49.62 ± 0.46
	Abs (%)		96.26 ± 0.06	96.59 ± 0.42	96.59 ± 0.47

NOV105 3cm LNF2 tile1

Ferrara meas. after baking

Novosibirsk meas. with Fe refit



Plexiglass Test

