



CMS GROUP AT CIEMAT

Ciemat

Centro de Investigaciones
Energéticas, Medioambientales
y Tecnológicas

Status of Muon Chamber Construction QC at CIEMAT

B. de la Cruz
CIEMAT (Madrid)

CMS Week June 2003

Number of SLs and Chambers produced up to now:

- ❏ 68 φ SL
- ❏ 32 θ SL
- ❏ 28 assembled chambers, 24 at CERN.
Next week, shipment of 5 more chambers (4 MB2, 1 MB4)

Summary :

- Wire positions and tensions
- Corner Block positions
- Chamber thickness
- Muon Database

Wires Position & Tension

φ SL at table 1

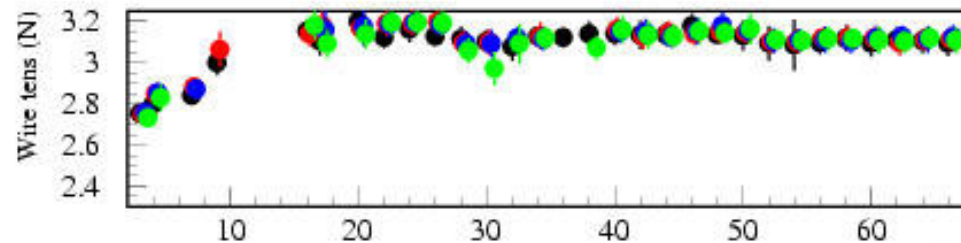
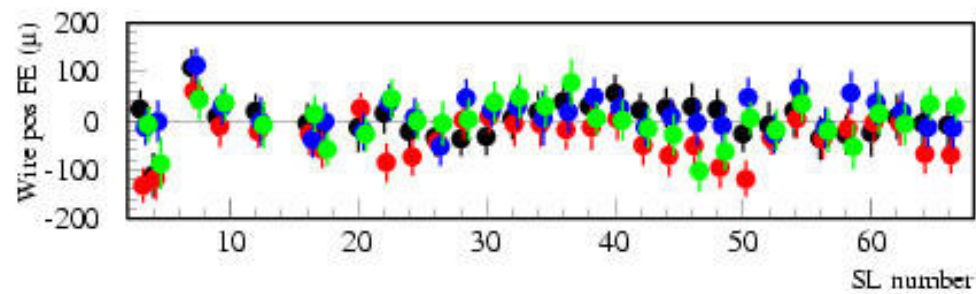
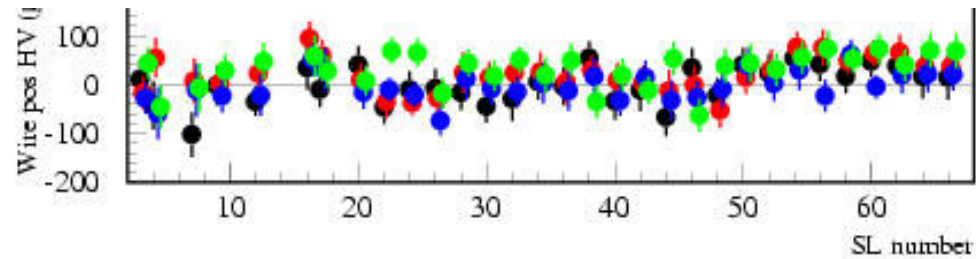
◆ Layer 1 ◆ Layer 2 ◆ Layer 3 ◆ Layer 4

HV

Residuals
from wire
positions

FE

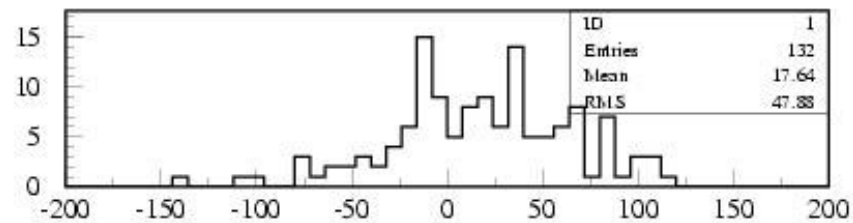
Wire tension



SL Number

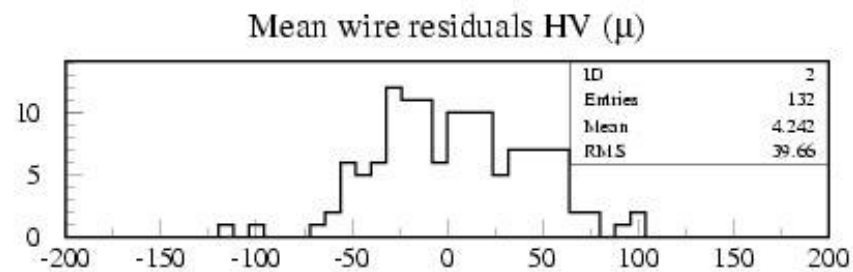
Wires Position & Tension

ϕ SL at table 2



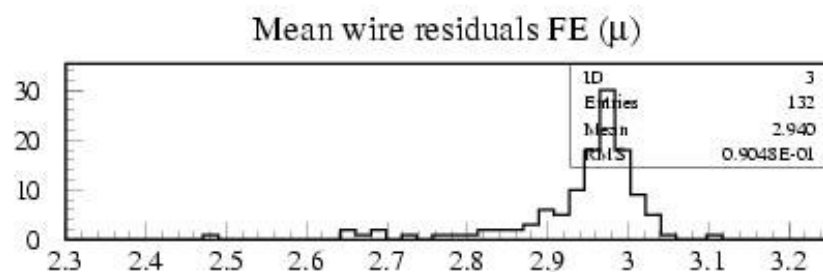
Mean = 17.6 μ

RMS = 47.3 μ



Mean = 4.2 μ

RMS = 39.7 μ

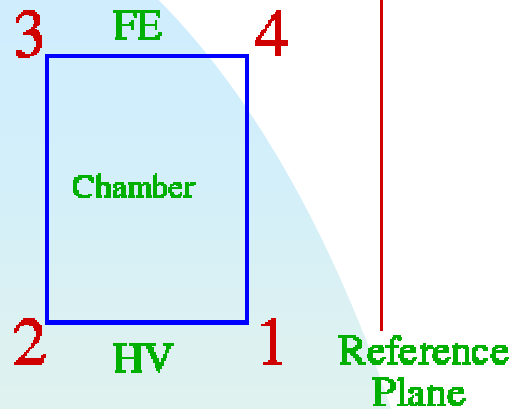


Mean = 2.9 N

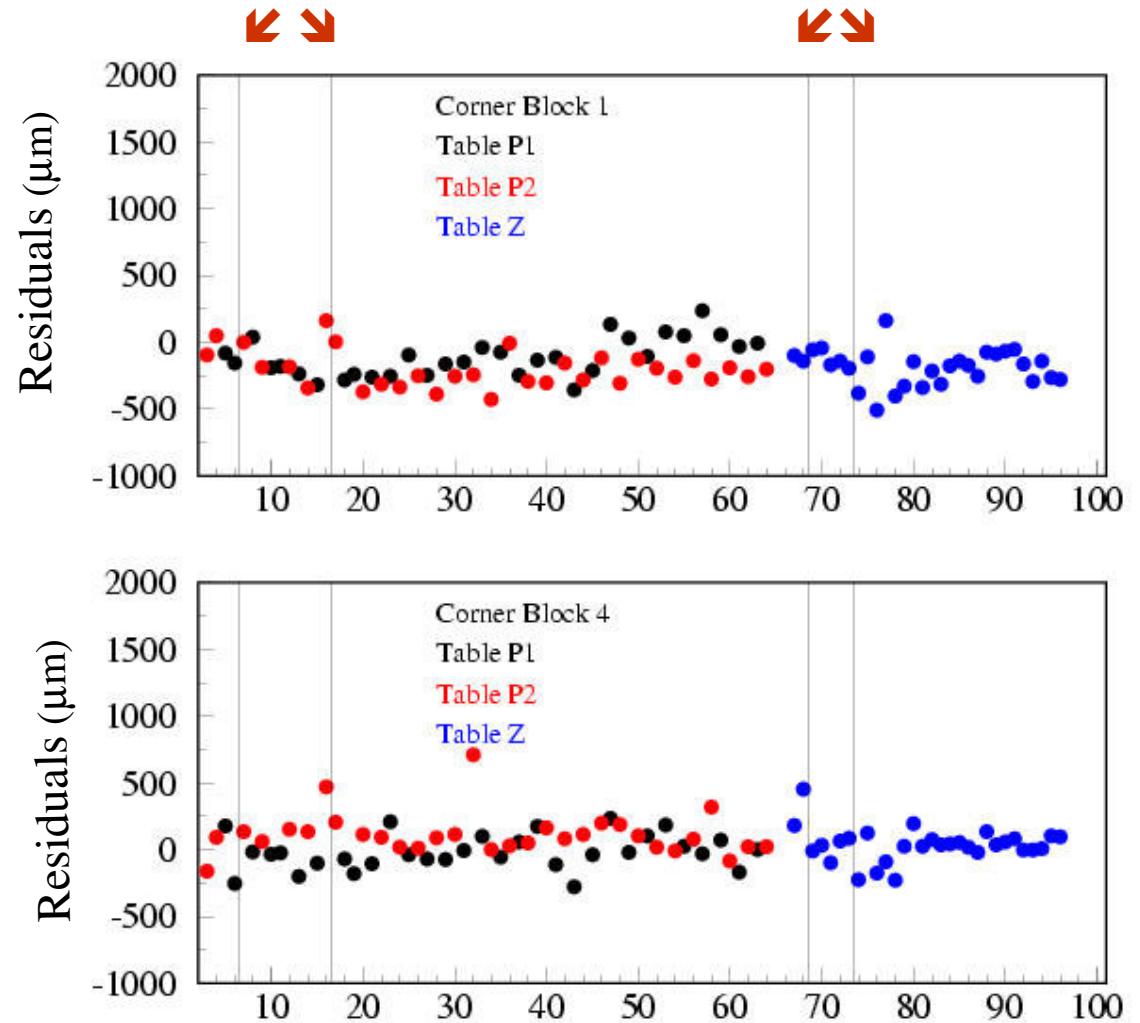
RMS = 0.09 N

Corner Blocks Positions (1 & 4)

Change in positioning/measuring methods

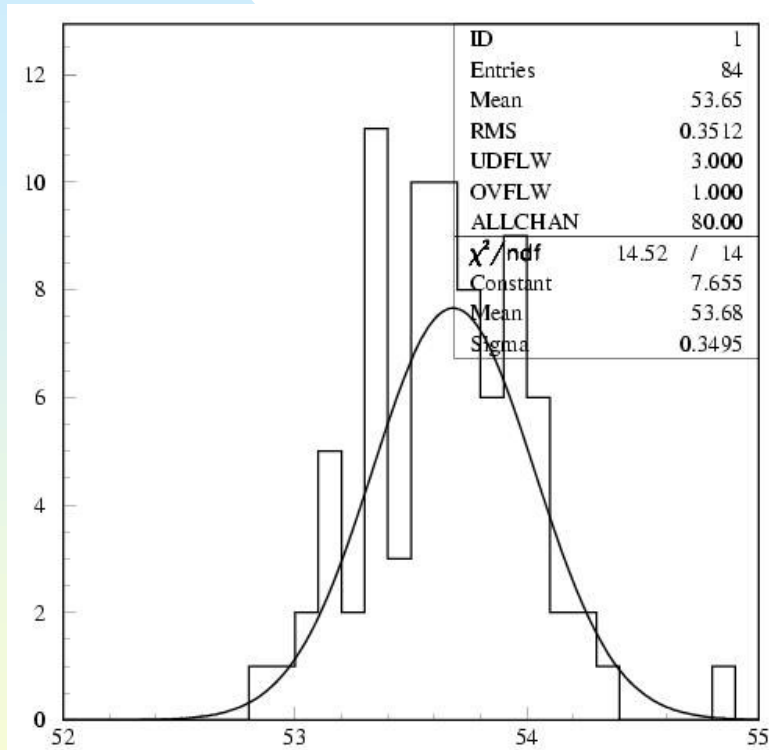


Rather uniform corner block position for the different SL at the different construction tables.



Chamber Thickness

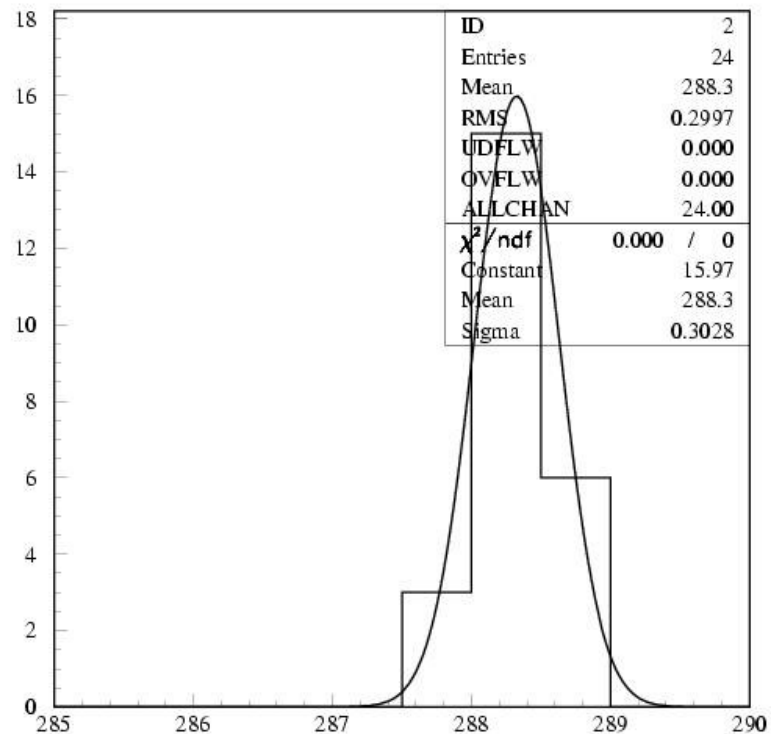
SL thickness measured when assembling chamber.
Results on 28 chambers .



SL (ϕ_1, ϕ_2, Z) Thickness(mm)

Mean value= 53.7 mm
RMS = 0.3 mm

June 2nd, 2003



Chamber Thickness (mm)

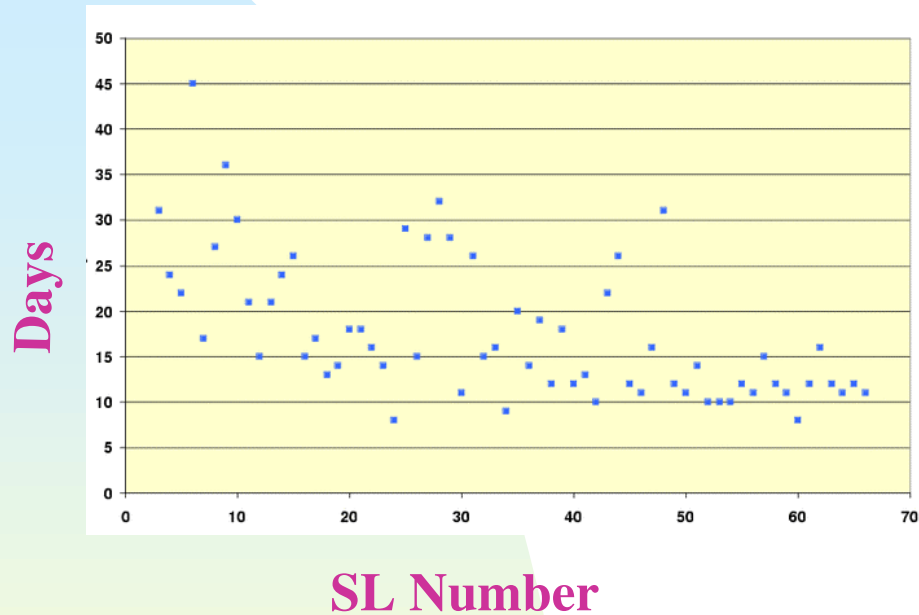
Mean value = 288.3 mm
RMS = 0.3 mm

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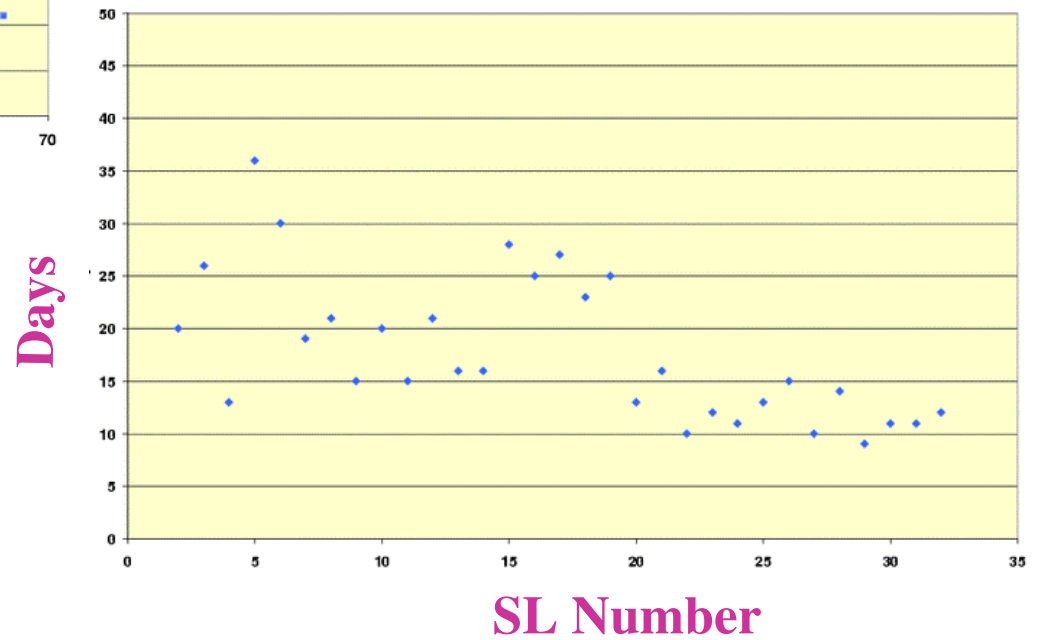
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Days for SuperLayer Production

Phi SL



Theta SL

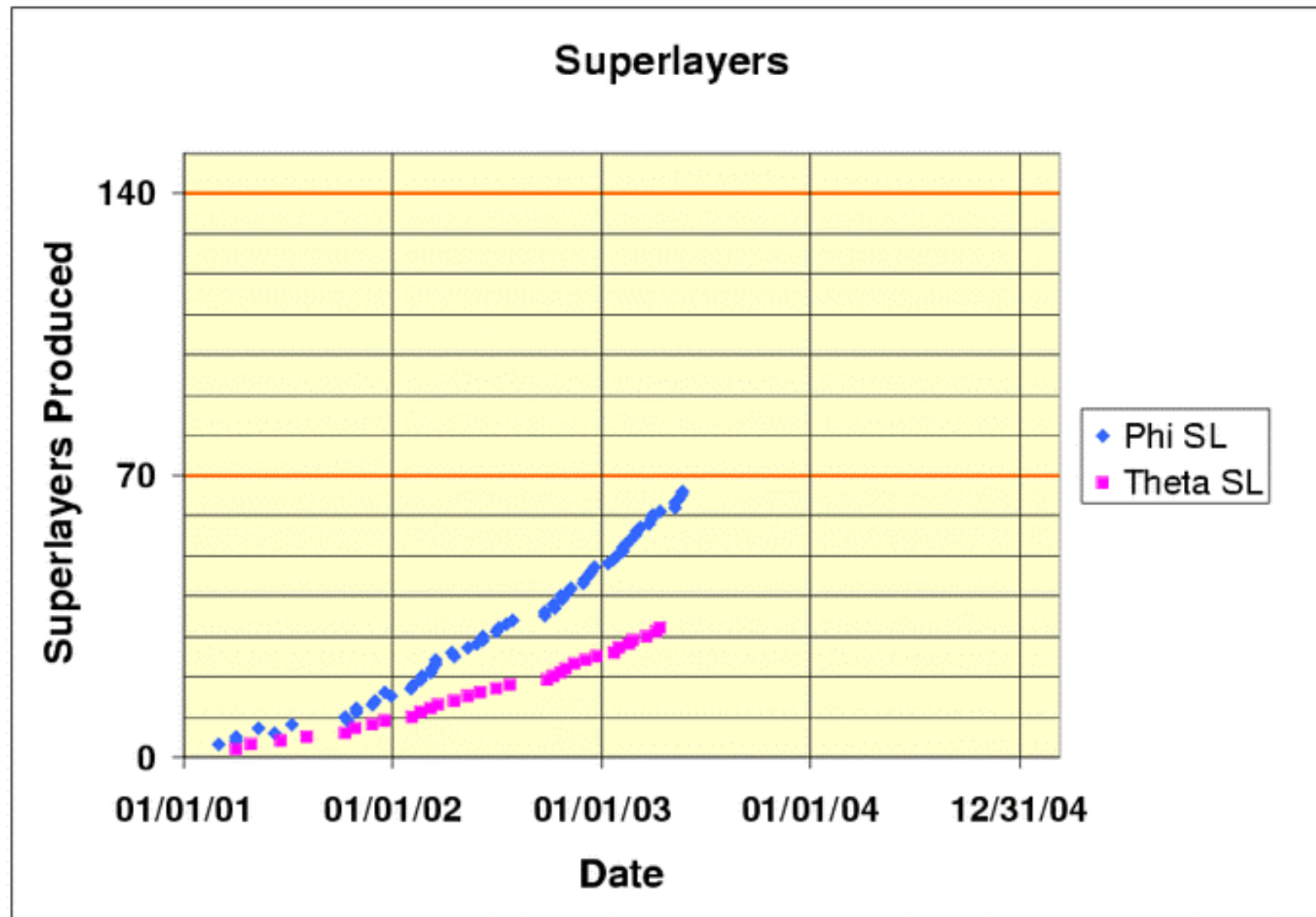


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SuperLayer Production

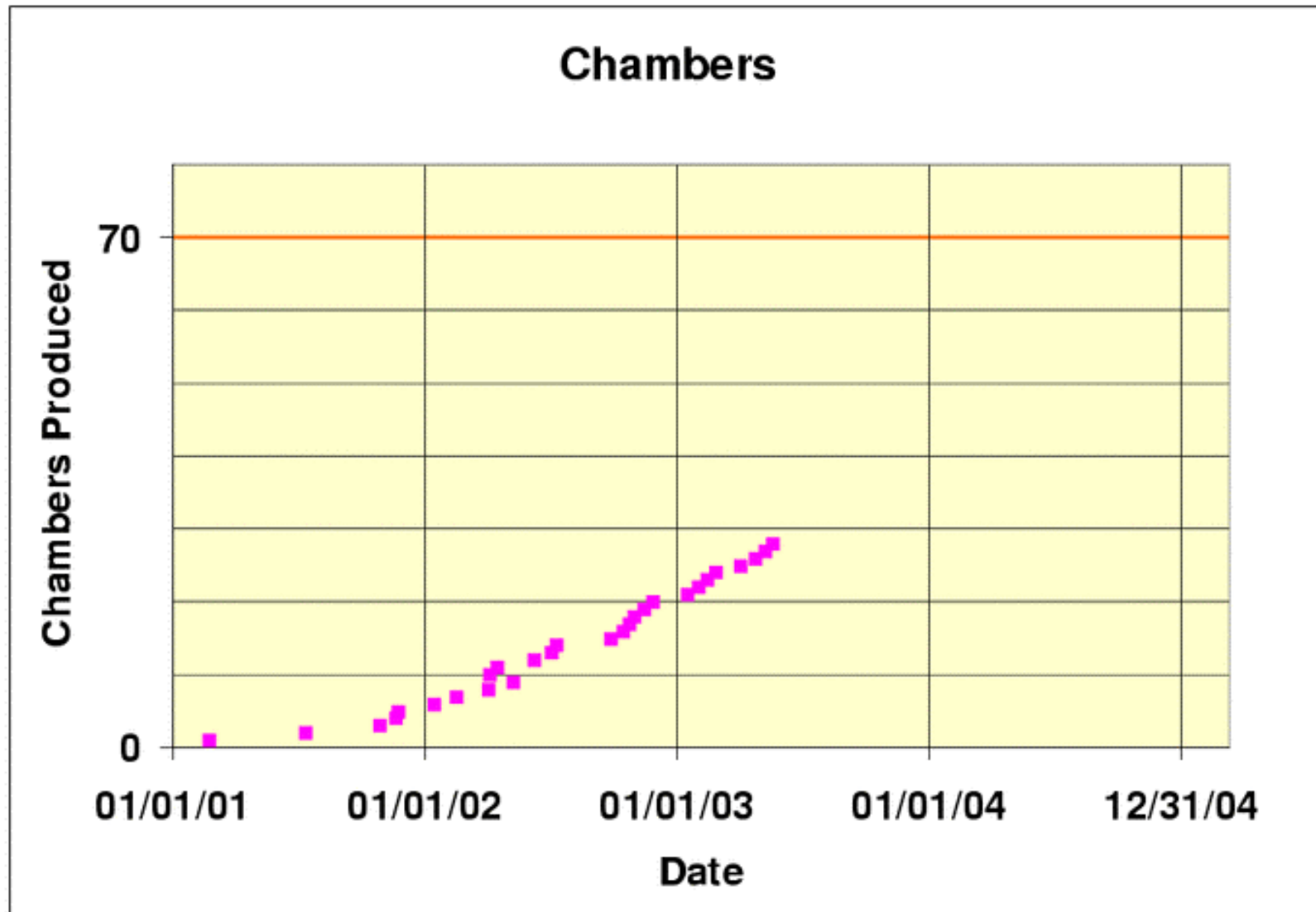


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Chamber Production



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Public Info

- Public Information on chamber construction and tests is available at <http://wwwae.ciemat.es/cms/QC.html>
- Our information on DT construction is moved into the Oracle DT Production Database at CERN, see:
http://oraweb03.cern.ch:9000/pls/cms_mb_prod/chambers.main



MB Construction: CHAMBERS (40)

Click on the ID for a full listing of the chamber data.

Main page - Display all chambers

Members	Chamber Id	Site	Station	Ring	Sector	Thickness	Honeycomb	Construction date
SL - Layets	2	Madrid	MB2P			288.21		11-JUL-2001
SL - Layets	3	Madrid	MB2P			288.22		26-OCT-2001
SL - Layets	4	Madrid	MB2P			288.19		19-NOV-2001
SL - Layets	5	Madrid	MB2P			288.29		22-NOV-2001
SL - Layets	6	Madrid	MB2P			288.36		14-JAN-2002
SL - Layets	7	Madrid	MB2P			288.56		15-FEB-2002
SL - Layets	8	Madrid	MB2P			288.66		04-MAR-2002
SL - Layets	17	Madrid	MB2P			288.86		23-OCT-2002
SL - Layets	18	Madrid	MB2P			289.04		31-OCT-2002
SL - Layets	19	Madrid	MB2P			0		13-NOV-2002
SL - Layets	20	Madrid	MB2P			288.28		27-NOV-2002
SL - Layets	21	Madrid	MB2P			288.53		15-JAN-2003
SL - Layets	22	Madrid	MB2P			287.46		31-JAN-2003
SL - Layets	23	Madrid	MB2P			288.28		13-FEB-2003
SL - Layets	24	Madrid	MB2P			288.2		25-FEB-2003
SL - Layets	25	Madrid	MB2P			287.4		02-APR-2003

SL - Layets	10	Madrid	MB2M	288.37	04-APR-2002
SL - Layets	11	Madrid	MB2M	288.56	15-APR-2002
SL - Layets	12	Madrid	MB2M	0	07-JUN-2002
SL - Layets	13	Madrid	MB2M	288.44	02-JUL-2002
SL - Layets	14	Madrid	MB2M	288.31	09-JUL-2002
SL - Layets	15	Madrid	MB2M	288	26-SEP-2002
SL - Layets	16	Madrid	MB2M	288.85	15-OCT-2002
SL - Layets	27	Madrid	MB2M	287.3	09-MAY-2003
SL - Layets	28	Madrid	MB2M	287.2	19-MAY-2003

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MB Oracle DataBase



MB Construction: SUPERLAYERS (

Click on the ID for a full listing of the superlayer data.

Main page - Display all superlayers

Members	SL Id - type - site	Chamber Id - Site	Corner block positions (1-4)				MT 123: ave/width/err	MT 234: ave/width/err	MT date
			1	2	3	4			
Layets - Wites	40 - PH11 - Madrid	20 - Madrid	-305	-565	118	163			
Layets - Wites	39 - PH12 - Madrid	20 - Madrid	-136	-414	108	174			
Layets - Wites	21 - THETA - Madrid	20 - Madrid	-143	-400	61	53			

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MB Oracle DataBase



MB Construction: LAYERS (4)

Click on the ID for a full listing of the layer data.

Main page - Display all layers

Members	Layer #	SL Id - type - site	Cells	<pos> FE	<pos> HV	<tension>	Noise at HV	Effic.	Temp.	Humid.	Press.
Wires	1	40 - PHL1 - Madrid	59	55.47	-33.86	3.14					
Wires	2	40 - PHL1 - Madrid	60	3.03	8.48	3.16					
Wires	3	40 - PHL1 - Madrid	60	26.06	-32.73	3.15					
Wires	4	40 - PHL1 - Madrid	59	0	19.11	3.16					

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