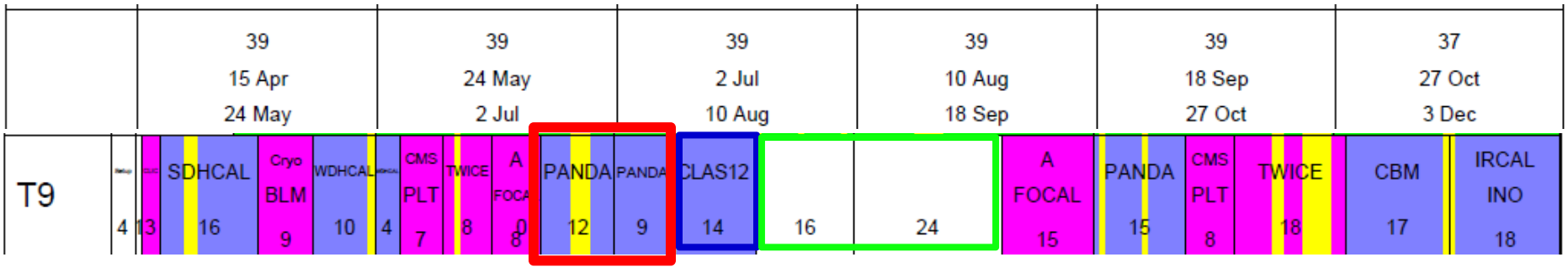
2012 TESTBEAM PLANNING

PANDA has been assigned two test beam periods in PS T9 beamline

- Jun 20 – Jul 11 (main user DIRCs) and
- Sep 18 – Oct 3 (main user Muons, room for DIRC if required).

Which groups plan to participate?



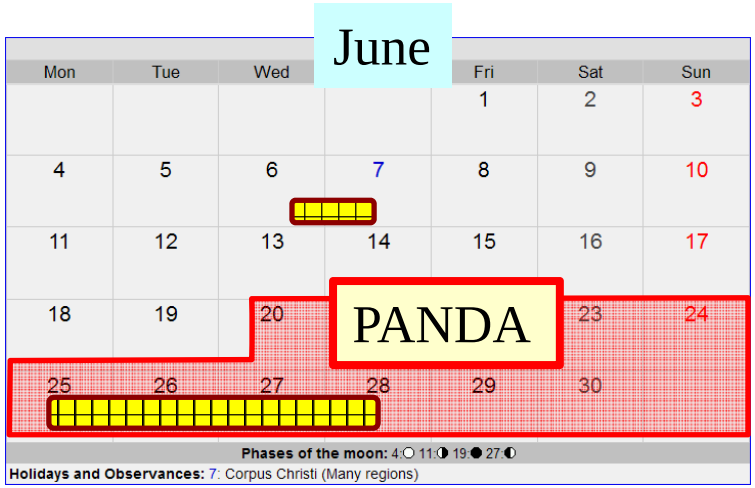
Does the June/July schedule work for PANDA DIRC groups?

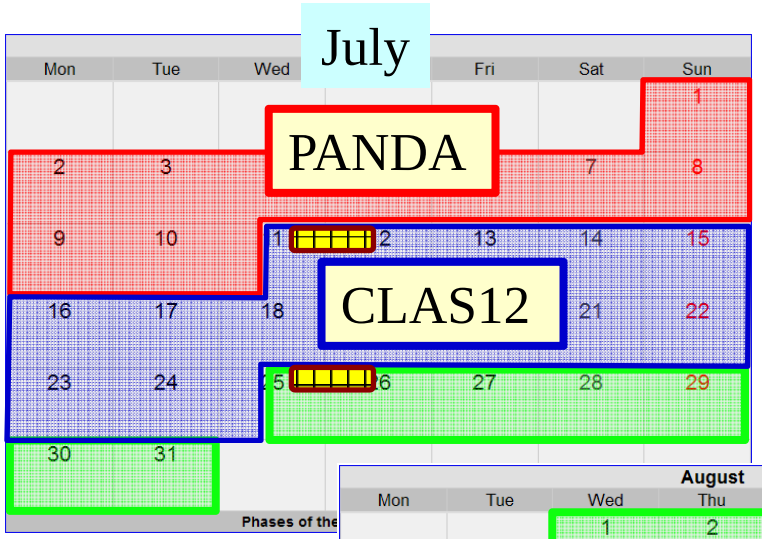
- Academic year still in full swing (lectures, exercises)
- Disk prototype (Giessen) has test beam opportunity at DESY in June/July
- Barrel DIRC prototype could profit from few more weeks preparation

What are our options?

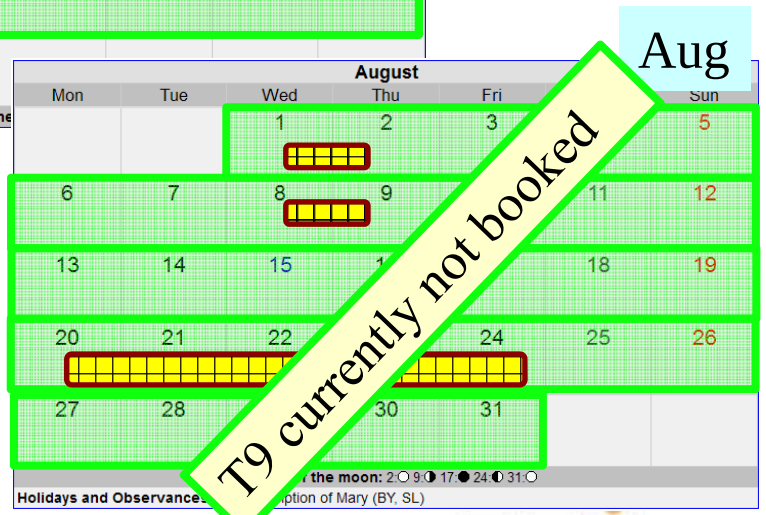
2012 TESTBEAM PLANNING

	39 15 Apr 24 May	39 24 May 2 Jul	39 2 Jul 10 Aug	39 10 Aug 18 Sep	39 18 Sep 27 Oct	37 27 Oct 3 Dec
T9	4 13 SDHCAL 16 Cryo BLM 9 WDHCAL 10	4 CMS PLT 7 TWICE 8 A FOCAL 8 PANDA 12	PANDA 9 CLAS12 14 16	24 A FOCAL 15	PANDA 15 CMS PLT 8 TWICE 18	CBM 17 IRCAL INO 18





MD: Machine Development
PS @ 50%



CLAS12 in T9 following us

then long 40 day gap (MD) until Sep 3...

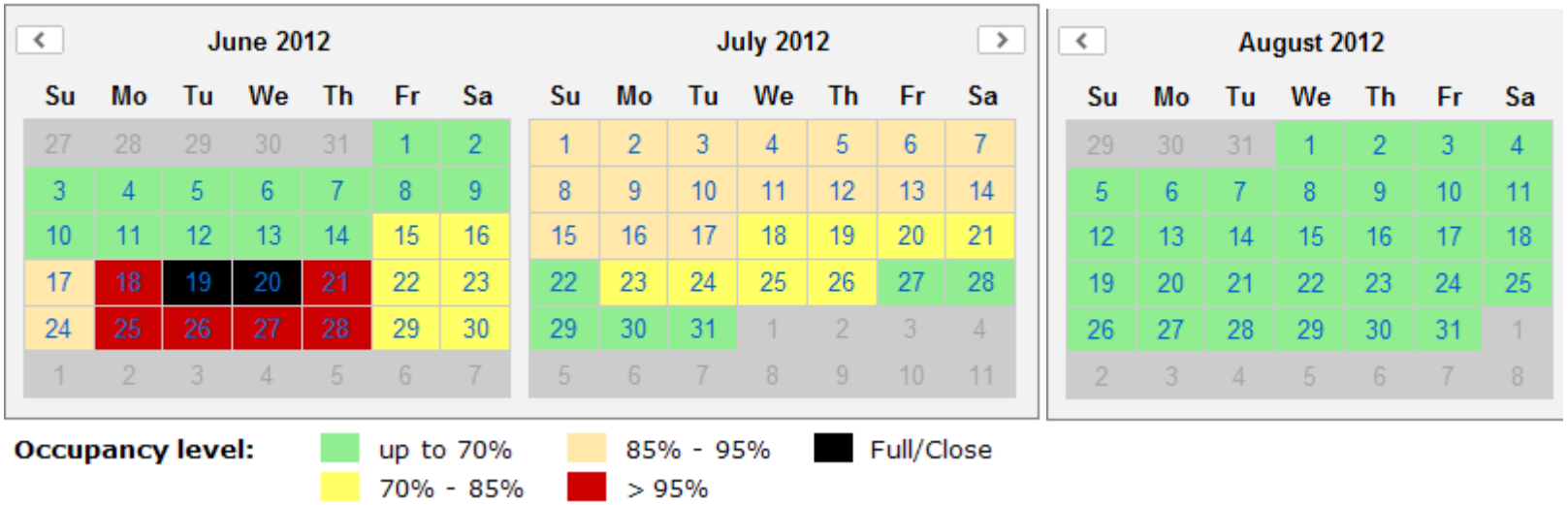
Could ask CERN to move us by a few weeks.

2012 TESTBEAM PLANNING

Logistics::Accommodations

CERN Hostel (58 Euro/night)

already mostly booked in June/July (summer students), available in August



June 2012

Su	Mo	Tu	We	Th	Fr	Sa
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
1	2	3	4	5	6	7

July 2012

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4
5	6	7	8	9	10	11

August 2012

Su	Mo	Tu	We	Th	Fr	Sa
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1
2	3	4	5	6	7	8

Occupancy level: up to 70% | 70% - 85% | 85% - 95% | > 95% | Full/Close

Alternatives in Thoiry (shuttle bus available):

Holiday Inn 91 Euro

Business Park Hotel 56 Euro

2012 TESTBEAM PLANNING

CLAS12 has expressed an interest to move
their time slot by 2 weeks: Jul 25 – Aug 8
have inquired at CERN, no official plan yet
want to avoid clash with our schedule

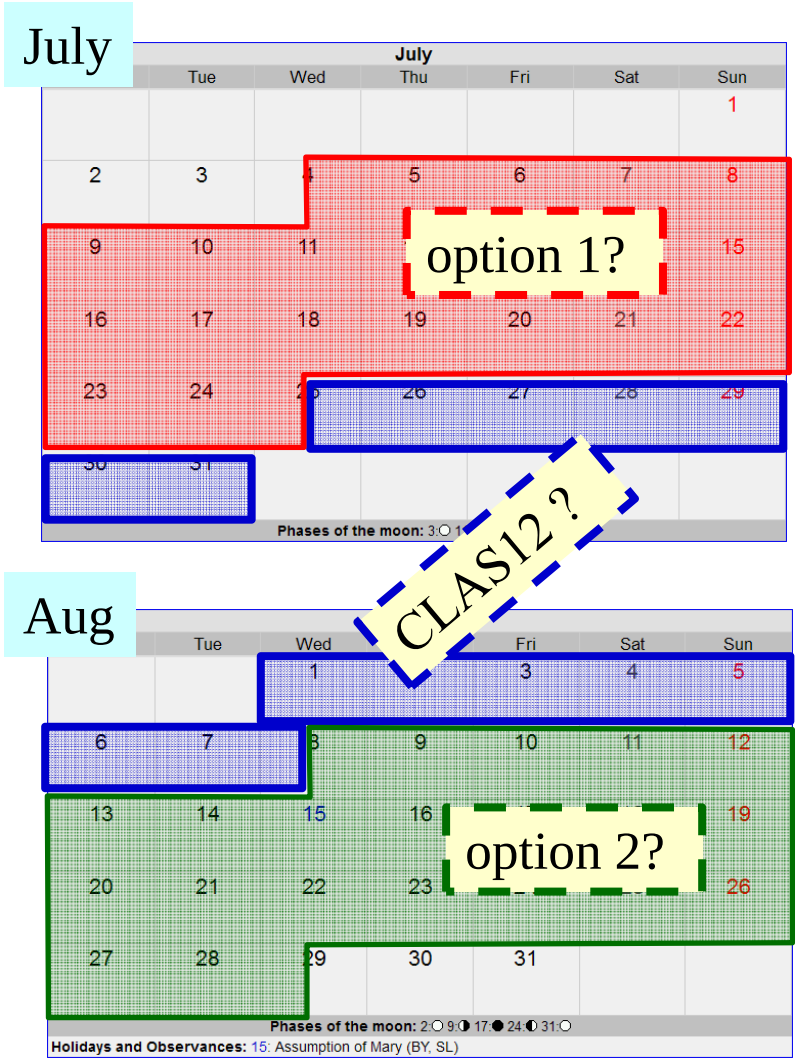
This could leave us with two options:

move by two weeks: Jul 4 – Jul 25 or

move after CLAS12: Aug 8 – Aug 29 ?

No guarantees that CERN would be able to
grant the requests for rescheduling
(availability of personnel in Aug?).

Let's discuss the Pros and Cons.



What constraints do interested DIRC groups have?
(Erlangen, Giessen, Glasgow, GSI, Mainz, Vienna, …)

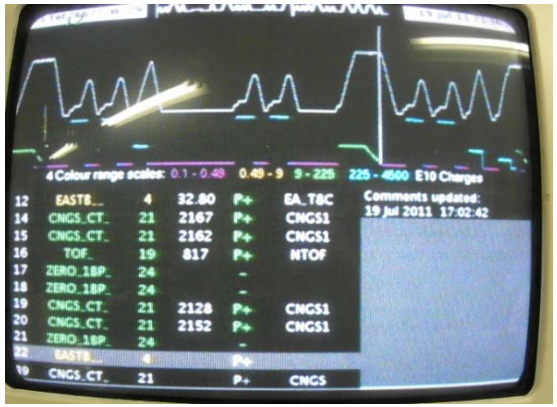
T9 TESTBEAM OVERVIEW

Common target in East Hall

primary 24 GeV/c proton beam from PS ($2*10^{11}$ per pulse)

45.6 sec “super-cycle”

nominal: 1 pulse (~0.4 sec) to T9 for each super-cycle
(3 pulses in 2011)



T9: 1.5 – 10 GeV/c

secondary target selects beam composition (electron-rich or hadron-rich)

target is common to East Hall North experiments, needs to be negotiated

T9 controls own momentum, polarity, and focus of secondary beam via computer

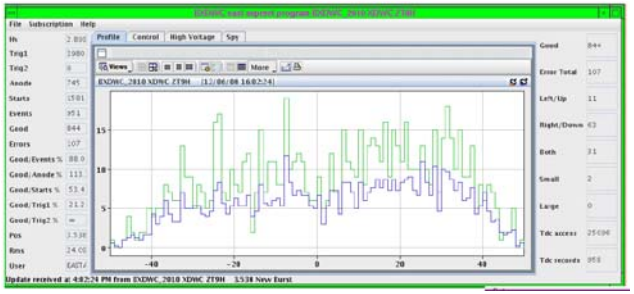
convenient access to setup, about 10 sec for beam stopper, user responsible for search

Beam instrumentation

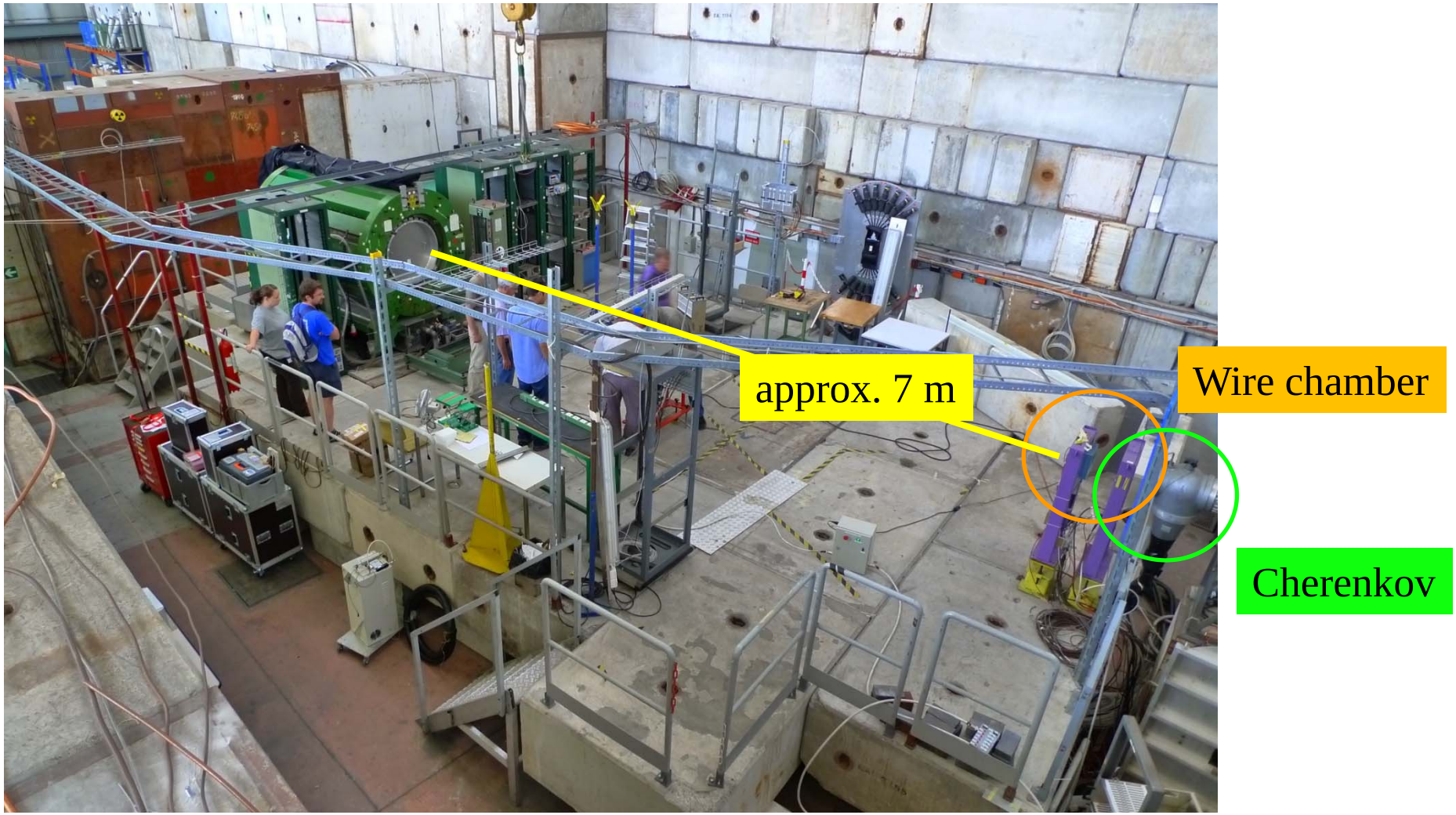
scintillator for beam intensity

wire chamber for monitoring x/y profile at exit beampipe

Cherenkov threshold counter (CO_2, Air) [not tested in 2011]



T9 TESTBEAM OVERVIEW

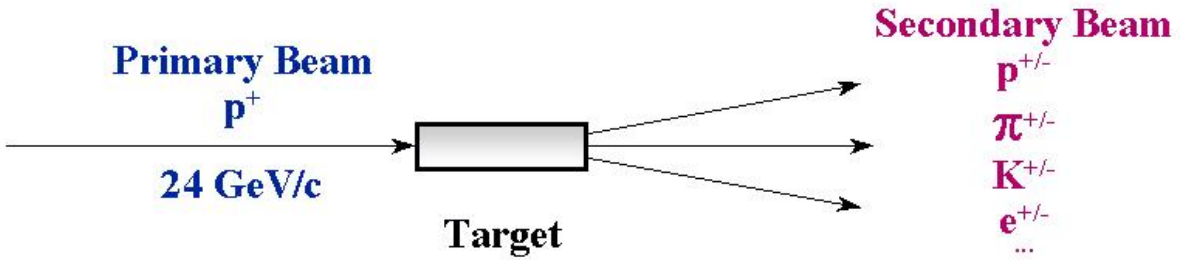


In 2011 CERN provided remote controlled tables (XSCA & DESY table) per request.

T9 TESTBEAM OVERVIEW

Update: 19/01/1998

Production of Secondary Beams



List of targets available for beams T9, T10, T11 (common target)

1	ZnS	Screen
2	Cu	Ø 4x25
3	Cu	Ø 4x50
4	Be	Ø 5x200 + W Ø 20x3 **
5	Al	Ø 5x150
6	Al	3x5x100 + W Ø 10x3 **
7	ZnS	screen
8	Cu	Ø 4x100
9	Al203	screen
10	Al	Ø 5x250 *
11	Al	Ø 5x200
12	Al	sheet Ø 80x1mm thick

"electron-rich"

"hadron-rich"

* normally used for maximum yield
** special targets : aluminium bar followed by a tungsten converter (more electrons)

N.B. a) dimensions are in mm
Ø 5x150 = diameter 5 mm
= length 150 mm
3x5x200 = vertical 3mm, horizontal 5 mm, length 200 mm
b) Control of the targets : PS Main Control Room (MCR, Tel. 76677).

From PS/PA Note 93-21 D.J. Simon, L. Durieu

B08 J.-P. Riunaud PS/CA

T9 TESTBEAM OVERVIEW

Test Beam Parameters

Parameter	T9	T10
Maximum Momentum [GeV/c]	15	7
Production angle [mrad]	0	61.6
Distance target – reference focus [m]	55.8	34.9
Beam height above floor [m]	2.5	2.505
Angular acceptance Horizontal [mr] Vertical [mr]	±4.8 ±5.8	±5.4 ±13.9
Acceptance solid angle [μsterad]	87	224
Theoretical momentum resolution [%]	0.24	0.24
Maximum momentum band [%]	±10	±8
Magnification at ref.focus (X,Y)	1.0, 1.2	0.8, 0.6
Protons on North target per spill	$15\ 10^{11}$	
Maximum flux (depending on p, Q, ..)	10^6	10^6