

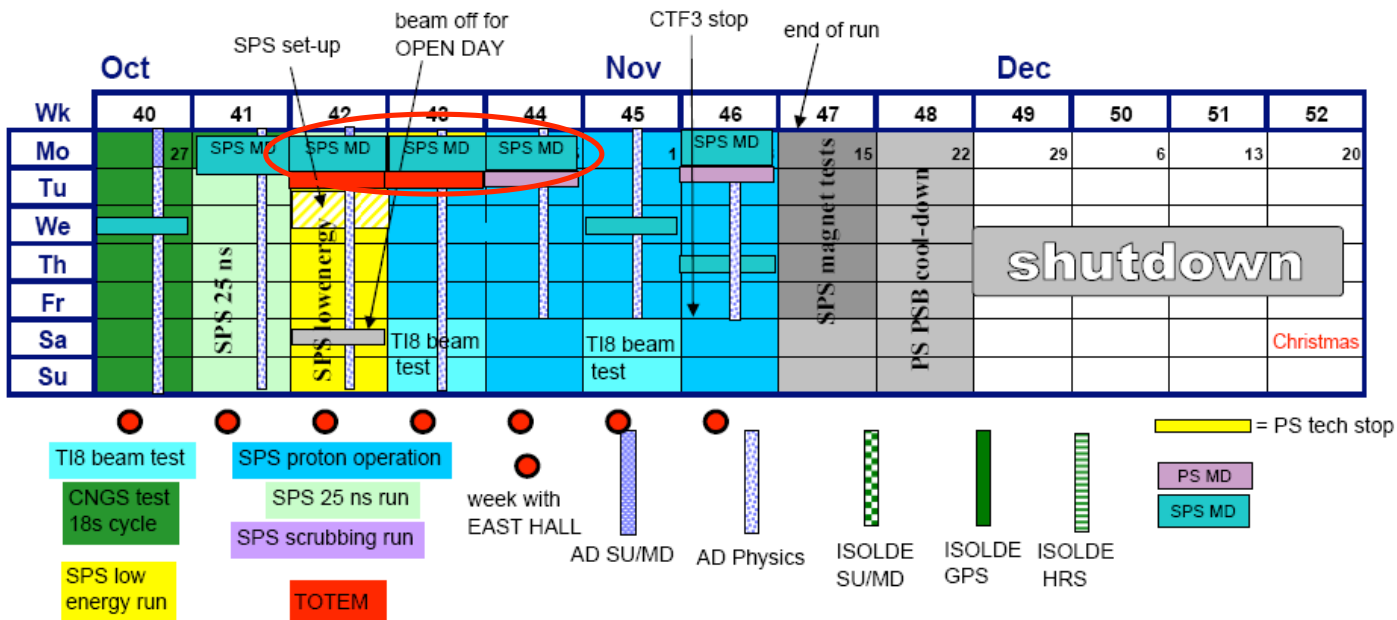


# Collimator tests in the SPS and TT40 – preliminary thoughts

---

G. Arduini after discussion with R.  
Assmann

# When?





# Week 41

---

- Week 41 (04/10 – 08:00 → 05/10 – 08:00)
  - Setting-up of the coast at 270 GeV/c with
    - TOTEM beam:
      - $n \times 4$  bunches (525 ns spacing)
      - $N_b = 0.4 - 1.1 \times 10^{11}$  p/bunch
      - $\epsilon^*$  close to  $1 \mu\text{m}$
    - LHC beam:
      - $n \times 72$  (or multiples of 12) bunches (25 ns spacing)
      - $N_b = 1.15 \times 10^{11}$  p/bunch
      - $\epsilon^*$  close to  $3.5 \mu\text{m}$
  - Measure lifetime, emittances, stability for the above beams
  - Tests instrumentation in coast: particularly needed and still missing LHC BPM in bunch by bunch mode over 1000 turns and Orbit with MOPOS



# Week 42

---

- Week 42 (11/10 – 08:00 → 12/10 – 08:00)
  - Setting-up of the coast at 270 GeV/c with TOTEM beam ( $1.1 \times 10^{11}$  p/bunch) -3 h (AB/OP, G. Arduini, T. Bohl)
  - Commission BLMs, measure response function (feasible with low intensity?) – 6 h – (B. Dehning, B. Holzer,...)
  - Beam based alignment – close collimators to 3 mm – 9 h (B. Dehning , B. Holzer, R. Steinhagen, J. Wenninger, ...)
  - Impedance measurement – 6 h (H. Burkhardt, F. Zimmermann, G. Arduini...)



# Week 43

---

- Week 43 (18/10 – 08:00 → 19/10 – 08:00)
  - Setting-up of the coast at 270 GeV/c with TOTEM beam -2 h (AB/OP, G. Arduini, T. Bohl)
  - Impedance measurement – 6 h (H. Burkhardt?, F. Zimmermann, G. Arduini...)
  - Setting-up of the coast at 270 GeV/c with LHC beam -3 h (AB/OP, G. Arduini, T. Bohl)
  - Vacuum measurements with beam loss at shallow angles -3 h- (J. M Jimenez, ....)
  - Trapped modes -3 h- (T. Kroyer,...) Can it be in parallel?
  - LHC feedback with BL -4 h- (B. Dehning, B. Holzer, R. Steinhagen, J. Wenninger,...)
  - BL maps (3 h) (B. Dehning, B. Holzer,....)



# Week 44

---

- Week 44 (25/10 – 08:00 → 26/10 – 08:00)
  - Setting-up acceleration to 450 GeV/c and extraction with pilot and LHC beam -10 h (AB/OP, G. Arduini, J. Wenninger, T. Bohl, P. Baudrenghien)
  - Setting-up of extraction with pilot and LHC beam – 2 h (J. Uythoven, B. Goddard)
  - Collimator test (4 h?)
  - Material tests (4 h?)



# Instrumentation needed

Device	Logging	FD	Available	Responsible
LHC BLMs	1 Hz	Y	MTG number?	?
SPS BLM	?	Y	Coast?	L. Jensen
LHC BPM orbit	1 Hz	Y	Y	L. Jensen/R. Steinhagen
LHC BPM fast	On req.	N	N/A in coast	L. Jensen
MOPOS	On req.	N	N/A in coast	S. Jackson
BCT/FBCT	>1 Hz	N	Continuous ?	L. Jensen/R. Jones
IPM/WS	1 Hz?	N	Continuous ?	A. Guerrero/M. Albert
PLL	>1 Hz	N	?	R. Jones
Q-meas	?	N	Y	R. Jones
Scrapers & coll.	-	-	Y	J. J. Gras
Long. profile	?	Y	Y	F. Follin
Vacuum pressure	1 Hz	Y	Y	I. Laugier
E-cloud mon.	?	N	?	J. M. Jimenez



## Other issues

---

- Availability in PCR of collimator control experts (AB/ATB)
- Availability of BDI people for setting-up (also in week 41...) and then on-call
- Assumed that collimator core team will be omni-present and ubiquitous
- Identify list of experts on-call for:
  - RF, PS, PSB, Controls
- Data correlation (MTG number+timestamp)