

HL-LHC / LIU Joint Workshop on March 30, 2012

Draft agenda

Workshop goal:

Progressing on an agreed set of 450 GeV beam parameters for High Luminosity operation in LHC after LS2 & LS3

Workshop format:

- One full day at CERN (Auditorium bdg.30) open but with registration
 - Morning: talks and questions
 - Lunch: all registered participants invited to Restaurant nb.2
 - Afternoon: open discussion on a few pre-defined questions, led by moderators.
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Suggested talks, speakers and questions

1. Summary and outcome of the 1st LIU-HL-LHC Brainstorming meeting (morning) –
Proposed speaker: Roland Garoby or Mike Lamont [tbc]
2. HL-LHC talks (morning):
[Talks should focus on a baseline scenario with a limited number of 1 or 2 options]
 - a. Transverse emittance blow-up and beam loss between injection and collision –
20+10 minutes
Proposed speaker: Verena Kain
 - Taking into account experience with beam until end of 2011
 - For 25 and 50 ns bunch spacing
 - b. Update of required beam characteristics at **injection** energy in LHC (can be more than one talk)
20+10 minutes
Proposed speaker: Oliver Bruning
 - Taking into account experience with beam until end of 2011
 - For 25 and 50 ns bunch spacing
 - Known “hard” and “soft” limits and resulting area of beam characteristics
 - c. Micro-batch filling scheme for pacman cancellation
10+5 minutes
Proposed speaker: Stephane Fartoukh
 - d. New ideas (e.g. pile-up levelling versus luminosity levelling schemes: potential gains and losses in performance)–
10+5 minutes
Proposed speaker: Frank Zimmermann [tbc]

3. LIU talks (morning):

a. Analysis of performance progress in the injectors in 2011

20+10 minutes

Proposed speaker: Giovanni Rumolo [tbc]

- Double PSB batch in the PS
- SPS improvement because of scrubbing?
- What was done in MDs
- Instrumentation-related issues

b. Update of achievable beam characteristics at injection in LHC

20+10 minutes

Proposed speaker: B. Goddard [tbc]

- Taking into account experience with beam until end of 2011
- For 25 and 50 ns bunch spacing
- Known “hard” and “soft” limits
- Suggesting area of equivalent beam characteristics.

c. Ideas to do better in the future

20+10 minutes

Proposed speaker: R. Garoby [tbc]

- Limitation for 25 and 50 ns bunch spacing: potential for higher intensity per bunch from PS / SPS ?
- Potential for higher brightness from the SPS?
- Additional beam manipulations (batch compression) with special case for scheme against Pacman effects?

4. Questions (afternoon) with one “moderator” / question, and a **1 slide** introduction for each project:

a. Overlapping LIU accessible beam parameters (areas) with LHC beam parameters regions (bands) – LIU speaker: Roland Garoby [tbc]; LH-LHC speaker: Oliver Brüning [tbc].

b. Pros-cons of 25 ns vs 50 ns –LIU speaker: Simone Gilardoni; HL-LHC speaker : tbd.

- i. Vacuum issues in the LHC and extrapolation to HL-LHC beam characteristics and potential mitigation measures – *Proposed speaker: Miguel Jimenez [tbc]*
- ii. Heating and impedance issues in the LHC and extrapolation to HL-LHC beam characteristics and potential mitigation measures – *Proposed speaker: Benoit Salvant [tbc]*

c. List of questions to be answered by the end of 2012, including urgent and dedicated MD requests –LIU speaker: Elena Shaposhnikova; HL-LHC speaker: tbd. (Ralph Assmann ?)

- i. Studies that have been (in 2011) and that will be performed (in 2012) in the LHC in preparation for HL-LHC operation – *Proposed speaker: Ralph Assmann or Frank Zimmermann [tbc]*
- ii.