News and special run plans

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News: LHCC, yellow report

- Meeting with Eckhard and Michelangelo on Monday to discuss about schedule
- June LHCC meeting: the forward physics studies and the yellow report will be mentionned at the closed LHCC session
- September LHCC meeting: If no opposition, we should make a presentation about the different forward physics topics and the luminosity/beam condition needed for these achievements
- November LHCC meeting: Provide a short document with a proposal of beam conditions and amount of data needed to perform our physics program as a fonction of year; this document has to go through the experiments well before the LHCC meeting, and the deadline to get a preliminary version is likely the beginning of September
- Yellow report: To be given at the LHCC as soon as it is fully ready. November LHCC meeting? December? We will hear about each chapter during this meeting
- Discussion about plans for LHC running conditions (following slides): follows up meetings and discussion with Helmut, Valentina, Mario...

LHC run planning for forward physics

- During commision period, beginning of 2015:
  - LHCf will benefit of special low lumi runs with VDM scans at the beginning of run II (towards May)
  - Totem can use this period for RP insertion commissioning
  - ALFA is also considering to run during the 50 ns LHC commissioning period, which might not be easy since this time is dedicated to machine studies at high luminosities. However, beam can be separated around point 1 to perform this exercise
- β^* =90 m, low luminosity runs:
  - Dedicated to TOTEM and ALFA to measure the total cross section
  - bunch population: N=0.5 10^{11}
  - 936 bunches in collision; 75 ns beam separation
  - no crossing angle, no transverse separation
  - average μ=0.05
  - L=1.08 10^{30} ($\sim$ 1 pb^{-1} per day)
  - Two weeks requested
- $\beta^* > 2000$ m: Measurement in the Coulomb region

LHC run planning for forward physics

- $\beta^* = 90$m, medium luminosity
  - Aim: collect between 50 and 100 pb^{-1} in special runs using vertical pots for QCD measurements
  - bunch population: N=1.5 10^{11}
  - 600 to 1000 bunches in collision (this will be varied as a function of time
  - crossing angle (xy): 100 μrad; no transverse separation
  - average μ=0.4
  - L=6.2 10^{31} (5.4 pb^{-1} per day)
  - Between 10 days and two weeks are needed in total (100 pb-1)
  - During these runs, Alice and LHCb can take data at a β^*=10 (injection value)
- $\beta^* =$0.6 m, medium luminosity
  - Aim: understand the backgrounds with horizontal detectors before going to high lumi runs, to align and calibrate the detectors, and to do QCD measurements
  - at low β^*, the lower luminosity is obtained by separating the beams
  - bunch population: N=1.2 10^{11}
  - 2500-2700 bunches in collision (changed as a function of time)
  - crossing angle (xy): 290 μrad; transverse separation (y): 45-60 μm
  - average mu between 0.4 and 2.7
  - L=1.6 10^{32} (14.2 pb^{-1} per day); 1.0 10^{33} (88 pb^{-1} per day)
  - One week is needed in total

LHC run planning for forward physics

- β^* =0.6 m, high luminosity (standard)
  - Aim: collect high luminosity data (beyond LS2)
  - bunch population: N=1.5 10^{11}
  - 2500-2700 bunches in collision
  - crossing angle (xy): 290 μrad; no transverse separation
  - average mu between 23 and 44.
  - L=1.5 10^{34} ($\sim$ 1000 pb^{-1} per day)

Possible plan and timescale for LHC running?

- 2015
  - Low lumi run high β^*=90 m, two weeks?
  - Medium lumi run β^*=90m, 600 bunches, bunch spacing 100ns, 1 week
- 2016
  - Medium lumi run β^*=90m, 1000 bunches, 1 week
  - Medium lumi run β^*=0.6m, 1 week
  - Low lumi run β^* >2000m, few days
- 2017
  - Medium lumi run β^*=0.6m, 1 week
  - High lumi run β^*=0.6m
  - 2018 and beyond: high lumi running