

BBLR – Support needs from ABP

HS – 28-2-2014

BBLR project

- Still preliminary – hope to be able to present the full project in March (2014)
- 4 pillars:
 - 1) Demonstrator project before LS2
(2 TCL collimators with wire, installation winter shutdown 2015-2016 or 2016-2017)
 - 2) Related beam instrumentation: lifetime, 2 D halo monitor, tune spectra
 - 3) Optimization of parameters for HiLumi
 - 4) Preliminary integration studies, designs, integration studies, construction and commissioning of installations

1) Demonstrator project before LS2

- For final design and implementation first positive discussions with S. Redaelli and R.Losito.
Major issue: Time scale for implementation in WS 2015/2016
- From ABP:
 - definition of experiments (TCL collimators are horizontal collimators; one in IP1 , one in IP5).
 - Optimal configuration of experiments.
 - Modellization of experiments, predictions of observables other than lifetime.
 - Participation in Experiments
 - Data analysis and interpretation
- 0.5 FTE from now to end 2017

2) Related beam instrumentation

- Parallel development of new instrumentation
 - improved lifetime measurements
 - 1D and 2 D Halo monitoringbased on:
 - a) synchrotron light
 - b) restgas ionization
 - c) experiments vertex distribution (gives convolution i.e. product of both beams)
 - tune spectra
- ABP: prediction of observables, specifications for instruments (Halo: dynamic range ($10^4 \dots 10^6$) versus integration time contribution to commissioning of instruments
- 0.1 FTE 2014 - 2016

3) Optimization of parameters for HiLumi

- Part of a process, which is not specific for the BBLR project:
 - crossing schemes, crossing angles, tunes, ...optics...
- BBLR specific
 - + taking the tools and evidence from wire demonstrator in order to predict performance after LS3.
 - + active contribution to study various implementations schemes (global compensation?, e- beam wires?, electrostatic compensations?, other?)
 - + final parameter set for wire compensation scheme, iterations with people building it
- 0.5 FTE from 2017 - 2023

4) Preliminary integration studies...

- Real designs and constructions will start after the year 2017
- But we need to study the feasibility of a few options now (i.e. e- beam wires, electrostatic compensation)
- For ABP: Be part of the brainstorming and evaluation community.
- 0.1 FTE 2014-2017