

“Beams in the injectors”

For the 2015 LHC start up and operation, the injectors will be requested to provide a large variety of beams. Probes and individual LHC-type bunches will be needed at the early commissioning stage. Later on, standard beams with 50 ns bunch spacing, 25 ns bunch spacing and a special doublet beam for electron cloud enhancement will be used for LHC vacuum conditioning and scrubbing. High brightness variants of the 50 and 25 ns beams (BCMS) will also have to be available for the LHC physics operation. The more exotic 8b+4e beam could also be considered in some operational post-scrubbing scenarios and should be made ready for that use. The goal of this paper is to provide a realistic estimation of the beam parameters expected from the injectors in 2015 for the aforementioned beam types. Since this estimation will rely on the full recovery of the 2012 performance and the successful implementation of new or optimized production schemes, we will address: 1) The critical milestones to reestablish the 2012 beam conditions (e.g. the scrubbing run of the SPS after the long shutdown); 2) The roadmap of machine studies for testing or improving the beam production schemes in PSB and PS; 3) The necessary experimental tests needed in the SPS for the production of the doublet scrubbing beam, and related issues.