

LIU-RF Systems along the Injector Chain and Outlook on Post-LS2 Performance

Wednesday, 27 January 2016 19:00 (30 minutes)

20' + 10'

<P> Major upgrades of the RF systems in the injector chain are required to reach the high beam intensity and quality for the High-Luminosity LHC. Finemet technology has been retained as the baseline for the future RF systems of the PSB. Since LS1 the PSB is operated with a fully digital beam control system, which allowed gaining important operational experience especially in view of driving the Finemet cavities. The upgrades of the RF systems in the PS are targeted to reduce the longitudinal impedances of the RF cavities by additional and improved feedbacks. Coupled-bunch instabilities will be controlled by a dedicated feedback using a Finemet cavity as a wide-band longitudinal kicker. In the SPS the regrouping of the sections of the main 200 MHz travelling wave cavities with two additional RF power plants and slip stacking for ions require a new low-level RF system. A new cavity controller for the 800 MHz RF systems is being commissioned. It will improve the relative phase control, a major ingredient to longitudinal stability. Status and planning of the upgrades will be summarized and an outlook on the performance after their full implementation in the era after LS2 will be given. </P>

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