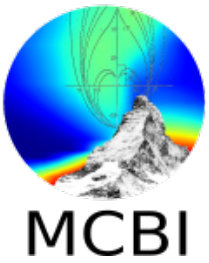

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* Implementation of RF Modulation in Booster for Mitigation of the Collective Effects in the Transient Process after the Swap-out Injection

Tuesday 24 September 2019 19:00 (10 minutes)

The on-axis swap-out injection is a promising injection scheme for the ultra-low emittance storage rings with generally small dynamic apertures. However, previous studies show that the initial mis-match in longitudinal phase space may lead to collective effects, such as transverse oscillations, emittance growth, and even particle loss before approaching the equilibrium state after injection, especially in the high bunch charge situation. We present our study of mitigating the collective effects in the transient process after injecting beam in storage rings by implementing RF modulation technique in booster. Both bunch lengthening and the increase of energy spread could be observed in the extracted bunch from booster. Furthermore, the bunch distribution in the longitudinal phase space after modulation will deviate significantly from the Gaussian distribution, the influences of which are also presented.

Author: Dr XU, Haisheng (IHEP)

Presenter: Dr XU, Haisheng (IHEP)

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