

# Optics Measurements, Corrections and Modeling for High-Performance Storage Rings



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## Low gamma-t optics in the SPS

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In order to increase the bunch current instability thresholds that limit the LHC bunch intensities in the SPS, several optics were proposed targeting the reduction of the transition energy. In particular, a simple solution by decreasing the integer tunes of the actual working point by 6 units was developed and applied to the real machine, enabling the injection and acceleration up to the flat top of single bunches with 3-fold increase in the intensity, within the nominal LHC-type beam sizes. This talk will review the measurements performed in the SPS for exploring the features of this optics with respect to the nominal ones. Particular emphasis will be given on studies undertaken in order to build and compare a non-linear machine model for the different optics.

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