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



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RHIC non-linear chromaticity and IR corrections

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In this talk we will review the measurement, modeling and correction of second order chromaticities, the interaction region multipole errors, and the third order resonance driving term in RHIC. We will focus on second order chromaticity modeling and correction. With a low beta* at IP6 and IP8, the second order chromaticities have to be corrected for successful RF re-bucketing and good beam-beam lifetime at store. We find that the sources of second order chromaticities are mostly localized in the IR6 and IR8. Therefore, it is possible to minimize them by adjusting the betatron phase advances between the two IPs.

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