

The SLS 2.0 Booster-to-Ring Transfer Line - Design Criteria, Diagnostics Layout and Beam Results

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Due to the limited transverse acceptance of fourth generation light sources, the characterization and control of the incoming beam from the booster to the storage ring is an important asset to achieve highly efficient and reproducible injection.

For the up graded Swiss Light Source (SLS 2.0) storage ring, a new booster to ring transfer line (BRTL) has been designed with a non dispersive section for beam parameter measurements and a double BPM corrector configuration for position and angle feedback of the injected beam.

Based on the BRTL design criteria, first beam results during SLS 2.0 commissioning are presented, including experience with quadrupole scans to document emittance exchange at the end of the booster ramp and steering stabilization of the beam at the injection point, resulting in a stepwise optimization of transmission into the storage ring.

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