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Impact of insertion devices on the SLS 2.0 dynamic aperture

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Insertion devices may be also very detrimental for the dynamic aperture of storage rings, since they introduce linear and higher order perturbations on the optics of synchrotrons. It is essential to study these effects to adjust the lattice to compensate for these terms when possible (high order multipole magnets are present in the lattice of the machine), or optimize the design of the IDs to minimize the higher order effects. We applied our analysis to SLS 2.0, the upgrade of the presently running Swiss Light Source (SLS) facility at Paul Scherrer Institut. In particular, we compared the results using an approach based on the calculation of the multipoles computed on the beam reference trajectory and on the kick map calculation.

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Footnotes

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Yes

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