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Design of high β injection section for the HALF storage ring

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A high β injection section is introduced to further increase the dynamic aperture for the HALF storage ring. In this paper, three different high β injection straight section designs are presented. In the design, an additional family of focusing quadrupoles is added to increase the horizontal- β function. The first design refers the injection section of the ESRF-EBS lattice, with a focusing quadrupole inserted inside the matching bend; the other two designs place the focusing quadrupole at the arc area and straight section on each side of the matching bend, respectively. The third design does not require any modifications to the arc area, and is also be spatially compatible with the initial local bump injection. In addition, this design can also be flexibly adjusted to the identical period lattice when space allows.

Footnotes

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