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Study of injection schemes for the SILF storage ring

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A fourth generation storage ring with an energy of 3 GeV is proposed by Institute of Advanced Science Facilities, Shenzhen. After repeated optimization, the storage ring achieved a dynamic aperture of 15mm. With a relatively large dynamic aperture, Off-axis injection scheme is possible for SILF storage ring. We first considered conventional local bump injection as a candidate. The nonlinear kicker injection, which reduces perturbations on stored beam, is also a promising scheme. In this paper, we studied the feasibilities of these two injection schemes on SILF storage ring, and discussed the advantages and disadvantages of them. Through simulation work, we showed the way to achieve a higher injection efficiency for nonlinear kicker injection.

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Footnotes

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