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Bayesian optimization of the local bump injection system in the HLS-II

Currently, a conventional local bump injection system with four pulsed dipole kicker magnets is adopted in the HLS-II storage ring to achieve top-off operation. Due to the nonlinear magnetic elements between the kickers in the HLS-II storage ring, the local bump injection presents technical challenges in forming a perfect closed bump, which causes the oscillation of the stored beam. In order to reduce the disturbance on the stored beam, we describe the implementation of bayesian optimization method at the HLS-II with only four bump kicker angles in this paper.

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