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Feasibility study of fast beam-based alignment using ac excitations in the HEPS

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To improve the performance of beam orbit correction, it is necessary to perform beam-based alignment in modern storage ring light sources. For the High Energy Photon Source (HEPS), a 4th generation storage ring light source being built in China, because of the large number of BPMs in storage ring, it may take dozens of hours to complete the alignment with a conventional BBA algorithm. To reduce the time cost, it has been proposed to use ac excitation for fast beam-based alignment. We tested the feasibility of applying this method to the HEPS storage ring through numerical simulations. In the following, we will introduce the simulation settings and the corresponding results.

Funding Agency

Footnotes

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Yes

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