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Momentum acceptance optimization for SRF "SKIF" storage ring

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SKIF (Russian acronym for Siberian Circular Photon Source) – is a new fourth generation synchrotron light source under construction in Novosibirsk, Russian Federation.

Sufficient for the top-up injection dynamic aperture of SKIF storage ring is achieved with two families of sextupoles. Beam lifetime in the storage ring is a parameter that defines the injection rate and stability of experiments with synchrotron radiation. Total beam lifetime of SKIF storage ring is limited by Touschek lifetime, which is defined by momentum acceptance. For optimization of momentum acceptance, elegant "MOGA for rings" that controls a set of multipole lenses is applied. Described in work are the results of beam lifetime simulation for various lattice regimes.

Footnotes

Paper preparation format

LaTeX

Region represented

Europe

Funding Agency

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