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Status of the storage ring and magnets of the SILA project

Monday 2 June 2025 16:00 (2 hours)

SILA (Synchrotron Laser) is a project of the National Research Center Kurchatov Institute (NRC KI) planned for the period 2022-2033. It is aimed at creating a 4th generation synchrotron radiation source and a free electron laser. The storage ring is divided into 40 periods, the perimeter (SR) is 1103 m, the electron energy is 6 GeV, the horizontal emittance is 70 pm·rad. The free electron laser is divided into 4 branches, the fourth branch is 2-4 GeV, the first - third 6 GeV. Magnets with high field quality requirements were developed for the project: dipoles on permanent magnets: dipole with longitudinal gradient and small dipole, quadrupoles with medium (50 T/m) and high gradient (90 T/m), combined dipole-quadrupole magnets, sextupoles and octupoles. This report will present the status of magnet production, their characteristics obtained during measurements and calculations of dynamics taking into account the field maps of real magnets.

Footnotes

Paper preparation format

Word

Region represented

Europe

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