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Analysis of the Diamond-II booster dipole magnets

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As part of the Diamond-II upgrade project, the booster synchrotron is due to be replaced with a low-emittance solution that enables efficient injection into the Diamond-II storage ring. The new booster lattice uses cells of combined-function gradient bends that integrate dipole, quadrupole and sextupole components into single magnets, alternating between focussing and defocussing bends. Accurate modelling of these magnets in particle tracking codes is vital to ensure the beam dynamics is accurately simulated during the entire ramp. In this paper we report on the methods used to correctly model the Booster-II dipole magnets and summarise the impact on lattice performance.

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Footnotes

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