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Describing curved magnetic fields

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Synchrotron light sources of the 4th generation typically use varying radius dipoles (also called longitudinal gradient bends). The longitudinal variation of these magnets needs to be properly modeled as the preconditions of the common local 2D approximation are only fulfilled at certain places.

We describe our concept of modelling such magnets using basis functions (approximately) fulfilling Maxwell Equations and compare these models to the magnetic fields calculated for various magnets foreseen for BESSY II or BESSY III.

Funding Agency

Footnotes

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