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Compact quadrupole-sextupole magnet units for the FLUTE-cSTART injection line

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One of the major goals of the cSTART project (compact STorage ring for Accelerator Research and Technology) at KIT is injecting and storing ultra-short bunches from the FLUTE linac into a very large-acceptance compact storage ring. To cope with the spatial constraints of the injection line connecting FLUTE with the storage ring three meters above, compact quadrupole-sextupole magnet units were designed, fabricated, and characterised.

In this contribution, we describe the magnetic design of these units and the underlying considerations, particularly with respect to cross-talk effects and their mitigation by design. We present the results of rotating coil and Hall probe measurements validating the magnetic design.

Footnotes

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