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Magnet development for the BESSYIII multi bend achromat

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The Helmholtz Zentrum Berlin (HZB) developing a new synchrotron light source, BESSYIII, as successor to the excellent 3rd generation light source BESSYII. The BESSYIII storage ring will be designed for a beam energy of 2.5GeV and Multi bend achromat (MBA) optics for low emittances of 100pm-rad. In parallel to optimizing the optics of the MBA cells, we are starting to develop various magnet concepts to test beam optics against mechanical requirements. The focus here is initially on the transverse gradient bend (TGB), quadrupole magnets (QP) and combined quadrupole-dipole magnets (QD).

In this paper we will give an overview of the BESSYIII requirements and the current status of the magnet designs for the BESSYIII storage ring.

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