

High field normal conducting septum magnets

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For the FCC challenging requirements are set for the extraction septa magnets. A scaled up LHC-like beam dump system architecture poses many difficulties in terms of space reservation, power consumption and dissipation. To address these challenges whilst maintaining the reliability and availability of the insertion, the study will first explore steel dominated Lambertson type septum magnets with a minimum target field of 2 T. The study focuses on field quality, maximum obtainable field, the leak field limits and the effective shielding of the circulating beams. The use of high-saturation magnetic materials and the space reserved for the coil will also be taken into account in the context of the possible implementation of a cryostat for a superferric solution.

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