

Electromagnetic design of the block coil option

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In the framework of the EuroCirCol project the high field accelerator magnet design work package 5 focuses on double-aperture dipole magnets made of Nb₃Sn conductors and providing a field of 16 T in a 50-mm aperture. Three options are considered: block-coils, common-coils and cosine- θ , the workload being shared between several European institutes. All options are explored and compared based on the same assumptions, in particular in what regards the conductor performance, operating temperature and margin. We will describe in this presentation the status of the block-coil design. A 2D electromechanical analysis in a double aperture configuration is presented as well as a 3D investigation in a single aperture configuration.

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