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## Design of a Nb<sub>3</sub>Sn 16 T block dipole for the Future Circular Collider

*Monday, August 28, 2017 3:30 PM (15 minutes)*

In the framework of the EuroCirCol project the high field accelerator magnet design work package 5 focuses on double-aperture dipole magnets made of Nb<sub>3</sub>Sn conductors and providing a field of 16 T in a 50-mm aperture. Three options are considered: block-coils, common-coils and cosine- $\theta$ , the workload being shared between several research institutes. All options are explored and compared based on the same assumptions, in particular in what regards the conductor performance, operating temperature and margin. This work describes 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 towards the manufacturing of a prototype.

### Submitters Country

France

**Primary author:** LORIN, Clement (CEA/IRFU,Centre d'etude de Saclay Gif-sur-Yvette (FR))

**Co-authors:** DURANTE, Maria; FELICE, Helene (CEA/IRFU,Centre d'etude de Saclay Gif-sur-Yvette (FR)); SEGRETU, Michel (CEA/Saclay)

**Presenter:** LORIN, Clement (CEA/IRFU,Centre d'etude de Saclay Gif-sur-Yvette (FR))

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