

# Design Studies of 16 T Nb<sub>3</sub>Sn Dipole Magnets at Fermilab

*Tuesday 30 May 2017 17:32 (2 minutes)*

Cost-effective superconducting dipole magnets with operating fields up to 16 T are being considered for the LHC energy upgrade (HE-LHC) or a Future Circular Collider (FCC). Design studies of 16 T Nb<sub>3</sub>Sn dipole magnets based on 2-, 3- and 4-layer 50 mm aperture cos-theta coils with and without stress management elements are being conducted at Fermilab. The goal of these studies is to explore the limit of the Nb<sub>3</sub>Sn accelerator magnet technology, optimize magnet design and performance parameters, and reduce magnet cost. The work status and the results of these studies will be reported and discussed.

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**Session Classification:** Poster session