

The Analysis of Eddy Current Loss in High- T_c Superconducting Power Cable with Respect to the Various Structure of Stabilizer

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The High- T_c Superconducting Power Cable consists multi-layer high- T_c superconducting cable core and the stabilizer which is used to bypass the current at fault time. The eddy current loss is generated in the stabilizer in normal operating condition and affects the whole system. In this paper, the eddy current losses are analyzed with respect to the various structure of stabilizer by using opera-3d. Moreover, the optimal conditions of the stabilizer are derived to minimize the eddy current losses from the analyzed results. The obtained results could be applied to the design and manufacture of the high- T_c superconducting power cable system.

keywords : Power cable, stabilizer, cryostat, eddy current loss