MT 26
International Conference
on Magnet Technology
Vancouver, Canada | 2019

Contribution ID: **982** Type: **Poster Presentation**

Wed-Mo-Po3.09-05 [67]: Voltage Distribution Research on Flux-Coupling-Type SFCL

Wednesday 25 September 2019 09:30 (1h 45m)

The level of short circuit current in power system is increasing rapidly, flux-coupling superconducting fault current limiter based on paralleled superconducting windings can effectively limit short-circuit current by the increased impedance after decoupling of the windings. The superconducting windings of high coupling factor is the core component of this SFCL, and the voltage distribution of windings may be uneven depending on the winding type and operating condition, this could affect the insulation and quenching of superconducting windings. In this paper, the voltage distribution of pancake-winding and layer-winding is theoretically analyzed, then simulations considering different operating conditions were carried out, two prototypes were processed and the experiment results are in accordance with simulation to some degree, at last the difference of two winding types is analysed based on data.

Index terms: flux-coupling SFCL, voltage distribution, pancake-winding, layer-winding

Authors: CAO, Zhiwei (Huazhong University of Science and Technology); REN, Li (Huazhong University of Science and Technology); Dr XU, Ying (Huazhong University of Science and Technology); YAN, Sinian (Huazhong University of Science and Technology, China); SU, Rongyu (State Key Laboratory of Advanced Electromagnetic Engineering and Technology); CHEN, Guilun (Huazhong University of Science and Technology); ZHANG, Yu (Huazhong University of Science and Technology)

Presenters: CAO, Zhiwei (Huazhong University of Science and Technology); REN, Li (Huazhong University of Science and Technology); CHEN, Guilun (Huazhong University of Science and Technology)

Session Classification: Wed-Mo-Po3.09 - Current Limiters II