

# Fault Current Limiting Characteristics of Flux-lock Type High-T<sub>c</sub> Superconducting Fault Current Limiter

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In this paper, we analyzed fault current limiting characteristics of flux-lock type high-T<sub>c</sub> superconducting fault current limiter (HTSC-FCL). Flux-lock type HTSC-FCL, which consists of a flux-lock reactor and an HTSC element, has been fabricated and its current limiting characteristics have been investigated through the experiments. Flux-lock type HTSC-FCL can adjust the initial limiting current level and increase the resistance of HTSC element during the fault condition by variation of the inductance ratio between two coils. It was confirmed from experiments that flux-lock type HTSC-FCL could improve both the quench characteristics and the transport capacity compared with resistive type HTSC-FCL, namely, the independent operation HTSC element.

keywords : fault current limiting characteristics, flux-lock type high-T<sub>c</sub> superconducting fault current limiter(HTSC-FCL), initial limiting current level, quench characteristics