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## AC loss distribution in two-layer HTS twisted cable

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Many investigators have reported the AC loss characteristics in a HTS multi-layered twisted cable. This experimental report describes the whole AC loss characteristics in HTS cable, and the AC loss distribution in each layer of the cable is based on a numerical method only. For this reason, the HTS cable is a twisted structure and a longitudinal magnetic field is generated. A voltage lead loops attached on each layer cannot accurately detect the loss voltage by the longitudinal magnetic field. In this study, we measured the AC loss distribution from a two-layer HTS twisted cable. To measure the AC loss in each layer, we placed the thermo-couples on each tape face with thermal insulations. We measured the influence of the twist pitch, twist direction and balance of the transport current of the outer and inner layers on AC loss characteristic in the two-layer twisted HTS cable. The inner layer is exposed to the longitudinal magnetic field produced by the outer layer, and the outer layer is exposed to a circumferential direction magnetic field produced by the inner layer. The transport current, amplitude and direction of the magnetic field determine the AC loss characteristics.

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