

Study of Hysteresis Loss in Coated Conductor from the Measured Values of Magnetic Field Profiles by Hall Probe Method

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We measured the field profiles, $H(x, I)$, near the surface of a coated conductor (CC) using the scanning Hall probe method. From the measured values of magnetic field profiles, the current profiles were calculated by the iterative inversion method. Also the flux density profiles and the hysteresis loss(Q) in a coated conductor was estimated. Current(I_a) and magnetic field(B_a) were applied simultaneously with three values of the ratio $\alpha = I_a / B_a$ fixed during the variation. B_a was applied in the normal direction with respect to the tape surface. B_a and I_a were varied from B_{peak} to $-B_{peak}$ and from I_{peak} to $-I_{peak}$. The results were compared with theoretical calculations based on Brandt's model.

Keywords : hysteresis loss, coated conductor, Hall probe