

## Current Redistribution of a Coated Conductor in a Perpendicular Magnetic Field with Transport Current

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The current redistribution of a superconducting tape in a perpendicular magnetic field ( $H_a$ ) was investigated with increasing transport current ( $I_a$ ) up to 90 % of the field dependent critical current ( $I_c$ ). We measured the field distribution near the sample surface across the tape width ( $2w$ ) using a scanning Hall probe method. Applying the inversion to the measured field distribution, we obtained the current distribution across the tape width. We visualized that the initial field-like distribution was changed into current-like distribution with increasing the transport current near the line  $I_a/I_c = \tanh(H_a/H_c)$  in where  $H_c = I_c/(2\pi w)$ . In addition, Lorenz force applied on the coated conductor was estimated employing the current profile and magnetic induction calculated under the conditions.

Keywords : current profile, coated conductor, Lorenz force