Open Source Codes for Computing the Critical Current of Superconducting Devices

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Field dependence of $I_c$ for a 12 mm tape.

Application:
Effect of the angular dependence of $J_c(B)$ in calculating the $I_c$ of a 10-strand Roebel cable.

$I_c$ of a 12 mm-wide Roebel

Precise $J_c(B)$

Simplified $J_c(B)$

1055 1035

1045 1067

This and more codes available at

HTS MODELLING GROUP

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Boundary condition

$V \cdot \nabla A = 0$

$V \cdot \nabla A_2 = -\mu_0 J_c(B) P$

Magnetic flux density in the considered Roebel cable [T]
Current modeling activities
(3A-LS-O1.9)

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Magnetization of crossed HTS stacks

Maximum possible trapped field in HTS stacks

Current distribution in multi-filamentary wires