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Computing Hysteresis and Coupling AC losses in round cable made from filamented HTS tapes

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Filamenting is crucial for reducing AC losses in superconducting coated conductor tapes and cables. However, the metallic stabilizing layer can lead to additional energy dissipation due to coupling currents. Estimating AC losses in such cases is challenging due to the complex geometry of the cable. We demonstrate a FEM numerical model suitable for estimation of the AC losses in different configurations of round cables made of filamented tapes, considering both the hysteresis and the coupling losses.

Topic

Innovative methods and tools for modelling large-scale HTS systems

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