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Voltage signals on terminations of an HTS magnet modelled in T-A formulation

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In this contribution is demonstrated how to evaluate in T-A formulation the “macroscopic”voltage in turns of HTS magnet energized by AC current. Decomposing the local electric field into the vector-potential induced and the electrostatic-charges initiated part allows to integrate the latter along the whole length of conductor, and compute in this way the voltage signal that will appear at the magnet terminations. On top of serving for checking the correctness of numerical computation, this quantity can be directly measured in experimental testing. As an example is shown the expected voltage signal on terminations of a pancake coil wound from coated conductor tape.

Topic

Coupled and uncoupled multiphysics problems

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