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A parameter-free reconstruction of HTS critical current magnetic field - angular dependency with sparse measurements

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This study delves into the application of sparse sensor placement, a data-driven approach that hinges on identifying an optimal orthogonal basis for representing the angular dependency of high-temperature superconducting tapes and other devices. The proposed method offers the potential to expedite measurements and computations substantially by acquiring data at select locations and reconstructing angular characteristics without needing parameter retrieval or curve fitting to a specific formula. Sparse measurements have shown promise in accurately reconstructing the angular field dependency of critical current, critical current density, and n-value.

Topic

Innovative methods and tools for modelling large-scale HTS systems

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