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Publication Date

2005-01-19

Rutherford Cables for High Field Magnets*

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The Superconducting Magnet Group of LBNL has fabricated cables for numerous superconducting applications. The cabling parameters (wire diameter, cable thickness, cable width, pitch length, and keystone angle) that are acceptable for various strands with different internal structure, composition, and fabrication methods are discussed. An empirical model is presented to guide in the cabling process to minimize or eliminate strand damage. The evolution of the cable parameters are placed in context with a discussion of the cables developed for the high-field magnets (D-20, RD-3 and HD-1) fabricated at LBNL.

*Supported by the U.S. Department of Energy under Contract No. DE-AC03-76SF00098.