

Test Results of Short Model Quadrupoles for the LHC Low-Beta Insertions*, R. BOSSERT, J. BRANDT, J. CARSON, D. CHICHILI, J. DIMARCO, S. FEHER, S. GOURLAY**, T. HEGER, Y. HUANG, J. KERBY, M.J. LAMM, P.J. LIMON, F. NOBREGA, I. NOVITSKI, D. ORRIS, J.P. OZELIS, T.J. PETERSON, W. ROBOTHAM, G. SABBI, P. SCHLABACH, J. STRAIT, M. TARTAGILA, J. TOMPKINS, A.V. ZLOBIN, FNAL; S. CASPI, A.D. MCINTURFF, R. SCANLAN, LBNL - A high gradient quadrupole with a 250 T/m maximum field gradient and a 70 mm bore is being developed for the LHC low-beta insertions by a collaboration of Fermilab and LBNL. The magnet design features a two-layer cosine two-theta coil made using cable made from SSC-type NbTi strands, free-standing stainless steel collars, and a cold iron yoke. A series of short model magnets is being built to optimize the design and develop assembly methods. These model magnets are tested in a vertical dewar in 1 atm 1.9 K superfluid helium. This paper summarizes the status of the development program and presents test results, including quench training, quench protection studies and measurements of the mechanical behavior of the structure.

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