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Publication Date

1997-04-18

Development of High Field Dipole Magnets for Future Accelerators.*R.M.SCANLAN,S.CASPI,K.CHOW,A.F. LIETZKE, D. R. DIETDERICH and A.D. MCINTURFF*,Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA- A major thrust of the magnet program at LBNL is development of the technology needed for the construction of high field accelerator magnets from brittle materials. A milestone in this program was reached in March, 1997 with the successful test of a Nb₃Sn dipole magnet which reached a field of 13.5T. This paper will discuss the lessons learned from the ongoing tests of this magnet. We will also describe the use of this dipole as a background field facility to test new candidate conductors for future magnets. The implications of these test results for the design and construction of a 16 T dipole magnet will be discussed. In particular, we will describe the conductor requirements for this new magnet, and the development effort that is underway to meet these requirements.

*This work was supported by the Director, Office of Energy Research, Office of High Energy and Nuclear Physics, High Energy Physics Division, U.S. Department of Energy, under Contract No. DE-AC03-76SF00098.

Presort Category: A1, Accelerators
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Preference: Oral