Title
Nb-base superconductors for the next generation high energy physics colliders

Author
Scanlan, Ron M.

Publication Date
2000-04-08

LBNL#46402
SC MAG#723

ABSTRACT for San Francisco 2000 Ta/Nb Meeting

Nb-base Superconductors for the Next Generation High Energy Physics Colliders

R.M.Scanlan, Lawrence Berkeley National Laboratory, Berkeley, CA 94720

One promising path toward a cost-effective next generation hadron collider is to use high field superconducting magnets in order to reduce the size of the storage ring. At present, two types of superconductor are being studied--the Nb-based A-15 compounds Nb3Sn and Nb3Al, and the high temperature superconductors (HTS). In this paper, the status of the A-15 compound superconductors will be reviewed. Several laboratories are developing the magnet technology required to fabricate coils from these brittle materials, and these programs will be reviewed as well. In order to improve the performance and cost-effectiveness of the A-15 superconductors, DOE High Energy Physics has launched a conductor development program. The goals, strategy, and status of this new program will be discussed.