The Beams and Applications Seminar Series

High-Temperature Superconducting Solenoids and Magnet Leads Development

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Bldg. 401, Room B-4100
Friday February 17, 1:30 pm

Host: Joel Fuerst

Abstract:

I will present details of a High Field Solenoid for Muon Collider which is part of a proposed ~35 T solenoid being developed under a series of SBIR contracts involving collaboration between Particle Beam Lasers (PBL) and Brookhaven National Laboratory. The critical current of this solenoid is 16 A at 77 K, but 285 A at 4.2K. At this current, the central field exceeds 15 T. We have increased the previous record field of a high temperature superconductor (HTS) solenoid by over 50%. In addition, I will discuss a novel magnet current lead system for a research cryostat. By using a baffle cooled approach and implementing HTS leads, the helium consumption rate is significantly reduced.

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