Abstract for:

Optimization of the heat treatment schedule for NED Powder-In-Tube Nb_3Sn strand

T. Boutboul

A Nb_3Sn strand was successfully developed by the company SMI for Next European Dipole (NED) activity and on the basis of Powder-In-Tube (PIT) method. This strand, after the standard reaction recommended by the firm (84 h @ 675 ^{o}C), presents attractive performances as a critical current density in the non-copper part of ~ 2500 A/mm^2 for 4.2 K and 12 T applied field, an effective filament diameter of ~ 50 µm and limited flux jumps at low magnetic fields. Heat treatment optimization studies are currently performed at CERN to try to optimize the strand electric abilities. For this purpose, various heat treatment schedules were investigated with a plateau temperature as low as 625 ^{o}C. The preliminary results of these studies are summarized in this presentation.