MT25 Conference 2017 - Timetable, Abstracts, Orals and Posters



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## Construction and test of the NHMFL 32 T superconducting magnet

Tuesday 29 August 2017 13:15 (1h 45m)

The 32 T project aims to combine a 15 T LTS magnet with two REBCO double pancake coils generating 17 T to create a 32 T user magnet for the MilliKelvin facility at the NHMFL. Both coil sets operate at 4.2 K using two separate power supplies. First, the construction of the REBCO coils and integration with the LTS magnet and cryostat is briefly described. Then, the cool down and performance characteristics of the complete magnet are presented. The effect of screening currents at 77 K and 4.2 K in the REBCO coils is described. Operating modes at 4.2 K include ramping the REBCO and LTS coils separately and synchronized one-hour ramps to full field. A deliberate quench of the REBCO coils using the embedded quench heaters is included in the test protocol. Data from voltage taps, Hall effect and temperature sensors are presented to quantify the performance of the magnet and the magnetic field it generates.

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