

**Quench Propagation Tests on the LHC Superconducting Magnet String**, L. COULL, D. HAGEDORN, G. KRAINZ, F. RODRIGUEZ-MATEOS, R. SCHMIDT, CERN, Geneva - The installation and testing of a series connection of superconducting magnets (three 10 m long dipoles and one 3 m long quadrupole) has been a necessary step in the verification of the viability of the Large Hadron Collider (LHC) at CERN. In the LHC machine, if one of the lattice dipoles or quadrupoles quenches, the current will be by-passed through cold diodes and the whole magnet chain will be de-excited by opening dump switches. In such a scenario it is very important to know whether the quench propagates from the initially quenching magnet to adjacent ones. A series of experiments have been performed with the LHC Test String powered at different current levels and at different de-excitation time constants in order to understand possible mechanisms for such a propagation, and the time delays involved. Results of the tests and implications regarding the LHC machine operation are described in this paper.