

Magnetization measurements and analyses on thin filament NbTi wires for SIS300 synchrotron superconducting dipoles.

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In order to minimise the heat generation in the fast cycled superconducting dipoles foreseen for the synchrotron SIS300 at FAIR, thin filaments NbTi wires must be developed (see presentation of G. Volpini). Following the previous efforts carried out in SSC developments many years ago we have analysed some thin filament NbTi wires obtained either from laboratories or industry. These wires give us the opportunity to set up suitable methodology for studying the wire needed to the manufacturing of SIS300 dipoles. We use a magnetic characterization, by means of VSM, to get important informations in the wire performances. Further to the usual critical current density computation, this presentation will deal with typical aspects of thin filaments NbTi wires which can be experimentally derived: the transverse resistivity, the presence of magnetic materials, the proximity effect.