



Contribution ID: 607

Type: **Presentation**

## **Analysis of FCC Nb<sub>3</sub>Sn Conductor at CERN**

*Thursday 27 June 2019 11:10 (15 minutes)*

In order to develop superconducting wires meeting the requirements for the 16 T dipole magnets proposed for FCC-hh, CERN is coordinating a conductor development programme, now involving 6 manufacturers and 6 academic partners.

A key goal of the programme is to develop Nb<sub>3</sub>Sn wires with a non-copper critical current density ( $J_c$ ) of 1500 A mm<sup>-2</sup> at 16 T and 4.2 K, and to demonstrate their suitability for long-length manufacturing and cabling.

In this presentation, the progress with this development will be reported, with a particular focus on superconducting characterisation and quantitative microscopy performed at CERN of recently developed Nb<sub>3</sub>Sn wires with novel layouts. Initial evidence of the suitability of these designs for the production of Rutherford cables will be presented based on rolling studies and cabling trials.

Finally, at a stage of the programme at which the interim target of a  $J_c$  comparable with the HL-LHC wire specification has been achieved, the next steps for the development will be briefly summarised.

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**Session Classification:** Magnets

**Track Classification:** Superconducting magnets & associated technologies