Workshop series announcement

Nb_3Sn Rutherford cable characterization for accelerator magnets

Several programs worldwide are developing Nb_3Sn magnets for high energy physics applications. The state-of-the-art 12 T insertion quadrupoles for HL-LHC and the 12-14 T high field dipoles are the results of decades of development during which various mechanical aspects of the conductor have been studied in numerous laboratories.

To push the Nb_3Sn technology safely towards the 16 T frontier, the community is invited to settle on a set of common characterization practices based on a shared vision of the underlying phenomenon and their consequences, the results of which will be applied to magnet design and fabrication phases.

The goals of this series are:

- To share experience gained worldwide on:
    - Conductor dimensional changes during heat treatment
    - Mechanical characterization of impregnated cable
    - Effect of mechanical stress and strain on conductor performances
- To set-up a best practice manual for the above topics
- To state on relevant design criteria for accelerator magnets
- To list the remaining problematics on above topics and define a development path to solve them

The idea is to hold typically 2 workshops a year.

The **first workshop** is planned at **CIEMAT**, Madrid, Spain **over two days, just after HL-LHC collaboration meeting.**

It will focus on:

- **Conductor dimensional changes during heat treatment**
    - Results state of the art
    - Role of the insulation on the dimensional change of the cable
    - Measurement setup and procedures
- **Impregnated conductor mechanical characterization**
    - Results state of the art
    - Measurement setup and procedure
    - Sample preparation procedure

Proposed dates: **November 16** (starting at 17:30) **– 17** (whole day)**, 2017**

This workshop is open to scientists and engineers involved in Nb_3Sn accelerator magnet development worldwide. Contributions are only oral. The scientific committee welcomes any suggestion of presentation/speaker.

A second workshop will be organized in 2018 focusing on cable performances sensibility to mechanical stress and strain and their impact on magnet design.

Scientific committee/Contacts:

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- Bernardo Bordini, Paolo Ferracin, Friedrich Lackner @ CERN