Contribution ID: **2796** Contribution code: **SUPM019** Type: **Poster Presentation**

Damage Experiment with Superconducting Sample Coils - Experimental Setup and Observations during Beam Impact

Sunday, 7 May 2023 16:00 (2 hours)

The damage mechanisms and limits of superconducting accelerator magnets caused by the impact of high-intensity particle beams have been the subject of extensive studies at CERN in the recent years. Recently, an experiment with dedicated racetrack coils made of Nb-Ti and Nb3Sn strands was performed in CERN's HiRadMat facility. In this paper, the design and construction of the sample coils as well as the results of their qualification before the beam impact are described. Furthermore, the experimental setup is discussed. Finally, the measurements during the beam experiment such as the beam-based alignment, the observations during the impact of 440 GeV protons on the sample coils and the obtained hotspots and temperature gradients are presented.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary author: GANCARCIK, David (European Organization for Nuclear Research)

Co-authors: GRAU, Andreas (Karlsruhe Institute of Technology); MUELLER, Anke-Susanne (Karlsruhe Institute of Technology); BERNHARD, Axel (Karlsruhe Institute of Technology); SENATORE, Carmine (Geneva University); Dr WIESNER, Christoph (European Organization for Nuclear Research); HERNALSTEENS, Cédric (European Organization for Nuclear Research); ZURMUEHLE, Damien (University of Geneva); WOLLMANN, Daniel (European Organization for Nuclear Research); SAEZ DE JAUREGUI, David (Karlsruhe Institute of Technology); ABU-SAIF, Falastine (Forschungszentrum Jülich GmbH); BONURA, Marco (Geneva University); GLAMANN, Nicole (Karlsruhe Institute of Technology); THOMSEN, Stefan (European Organization for Nuclear Research)

Presenter: GANCARCIK, David (European Organization for Nuclear Research)

Session Classification: Student Poster Session