



Contribution ID: 66

Type: Oral presentation (by invitation only)

RF tests of Nb/Cu 1.3 GHz elliptical cavities

Tuesday 31 May 2022 14:54 (9 minutes)

The Nb/Cu SRF cavities offer several advantages with respect to the bulk Nb cavities. However, their application has been limited due to a degradation in the performance systematically observed at high accelerating gradients. In recent years, a vast R&D campaign has been devoted to the optimization of the manufacturing process of 1.3 GHz cavities at all levels, from the production of the substrate to the application of the coating. RF tests performed at the CERN's cryogenic laboratory (cryolab) have been key to guide the decision-making to modify accordingly the manufacturing process, aiming at improving the performance of the cavities to meet the operational specifications of the FCC SRF system. As a proof of success of this R&D campaign, a cavity achieved unprecedented performance with mitigated Q slope at 1.85 K. In this presentation, an overview of the evolution of the RF performance of the cavities will be given together with the optimization of the process followed.

Author: VEGA CID, Lorena (CERN)

Co-authors: BIANCHI, Antonio (CERN); PEREIRA CARLOS, Carlota (FCT Fundacao para a Ciencia e a Tecnologia (PT)); FAVRE, Gilles (CERN); ROSAZ, Guillaume Jonathan (CERN); SCIBOR, Karol (CERN); MARQUES ANTUNES FERREIRA, Leonel (CERN); REDONDAS MONTESERIN, Manuel (CERN); VIDAL GARCIA, Pablo (Centro de Investigaciones Energéticas Medioambientales y Tec. (ES)); ATIEH, Said (CERN); LEITH, Stewart (CERN); VENTURINI DELSOLARO, Walter (CERN)

Presenter: VEGA CID, Lorena (CERN)

Session Classification: Technology

Track Classification: SRF Programme