



Contribution ID: 772 Contribution code: **WEPM109**

Type: **Poster Presentation**

Beam-Impact Validation of HL-LHC Collimator Materials: the "MultiMat-2" Experiment

Wednesday, 10 May 2023 16:30 (2 hours)

In 2017, a proton-impact test HL-LHC collimator materials was carried out in the HiRadMat facility at CERN. The experiment, called "MultiMat", enabled the testing of bulk and coated materials developed at CERN for different beam collimation functionalities. Manufacturing of these materials was then passed to the industry, leading to a series production for use in the collimators installed in the LHC during Long Shutdown 2 (LS2). The industrial versions of bulk and coating materials were tested in HiRadMat in 2021 in the "MultiMat-2" experiment, that efficiently re-used of the same experimental test bench as for "MultiMat". This new experiment proved the reliability of the absorbers installed in LS2, and confirmed the possible use of alternative materials and coatings for the next LS3 collimator production. This paper describes the preparation and beam parameters of "MultiMat-2", the experimental and data-acquisition equipment and the main results of the experiment.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary author: CARRA, Federico (European Organization for Nuclear Research)

Co-authors: BERTARELLI, Alessandro (European Organization for Nuclear Research); PEREZ FONTENLA, Ana Teresa (European Organization for Nuclear Research); LECHNER, Anton (European Organization for Nuclear Research); PERILLO MARCONE, Antonio (European Organization for Nuclear Research); ACCETTURA, Carlotta (European Organization for Nuclear Research); GLAUDE, Didier (European Organization for Nuclear Research); FARINA, Edoardo (European Organization for Nuclear Research); RIGUTTO, Emilien (European Organization for Nuclear Research); BERTHOME, Emmanuel (European Organization for Nuclear Research); NUIRY, Francois-Xavier (European Organization for Nuclear Research); GUARDIA, Jorge (European Organization for Nuclear Research); GUINCHARD, Michael (European Organization for Nuclear Research); CHARITONIDIS, Nikolaos (European Organization for Nuclear Research); SACRISTAN DE FRUTOS, Oscar (European Organization for Nuclear Research); SIMON, Pascal (GSI Helmholtzzentrum für Schwerionenforschung GmbH); BRUCE, Roderik (European Organization for Nuclear Research); REDAELLI, Stefano (European Organization for Nuclear Research); PFEIF-

FER, Stephan (European Organization for Nuclear Research (CERN)); VOLLENBERG, Wil (European Organization for Nuclear Research)

Presenter: ACCETTURA, Carlotta (European Organization for Nuclear Research)

Session Classification: Wednesday Poster Session

Track Classification: MC7: Accelerator Technology and Sustainability: MC7.T19: Collimation