



Contribution ID: 271 Contribution code: THP32

Type: **Poster Presentation**

New beam loss monitor ionisation chambers engineering

Thursday 12 September 2024 16:00 (1h 30m)

More than 4000 Beam Loss Monitors (BLM) systems are operating at CERN. About 93% of them are installed in the LHC machine. The Ionisation Chambers (IC) are the part of the system where the lost beam particles ionise nitrogen gas in a chamber with electrodes at high voltage. The resulting current indicates the quantity of the beam loss. In the last 20 years, all BLM ICs were produced in collaboration with external institutes. Control of all details of the materials and processes are required to ensure instrument sensitivity and precision across the large series.

CERN took back this production process in 2022 and much of the specific knowledge of design details and production technology was required to be re-engineered.

This work presents production specification, design of tooling and test facilities for the first prototypes of a new series to be produced including their test in CERN facilities with beam. The further ramp-up to an industrial process to allow for a production of 1000 units in the years to come is discussed.

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

Primary author: SCHNEIDER, Gerhard (European Organization for Nuclear Research)

Co-authors: TZAMARIAS, Dion Efstathios O. (European Organization for Nuclear Research); GUDKOV, Dmitry (Lawrence Berkeley National Laboratory); VENESS, Raymond (European Organization for Nuclear Research); GRIFFITHS, Victoria (European Organization for Nuclear Research); BASTOS, Wilker (European Organization for Nuclear Research); VIGANO', William (European Organization for Nuclear Research)

Presenter: SCHNEIDER, Gerhard (European Organization for Nuclear Research)

Session Classification: THP: Thursday Poster Session

Track Classification: MC2: Beam Loss Monitors and Machine Protection