



Contribution ID: 919 Contribution code: WEPA022

Type: **Poster Presentation**

## Recent measurements and analyses of the beam-halo dynamics at the CERN LHC using collimator scans

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

Controlling beam losses is of paramount importance in superconducting particle accelerators, mainly for ensuring optimal machine performance and an efficient operation. Models based on global diffusion processes, in which the form of the diffusion coefficient is the stability-time estimate of the Nekhoroshev theorem, have been studied and proposed to investigate the beam-halo dynamics. Recent measurements with collimator scans were carried out at the CERN Large Hadron Collider (LHC) with the aim of reconstructing the form of the diffusion coefficient. The results of the analyses performed are presented and discussed in detail.

### Funding Agency

Research supported by the HL-LHC project.

### Footnotes

### I have read and accept the Privacy Policy Statement

Yes

**Primary authors:** MONTANARI, Carlo Emilio (Bologna University); BAZZANI, Armando (Bologna University); GIOVANNOZZI, Massimo (European Organization for Nuclear Research); HERMES, Pascal (European Organization for Nuclear Research); REDAELLI, Stefano (European Organization for Nuclear Research)

**Presenter:** MONTANARI, Carlo Emilio (Bologna University)

**Session Classification:** Wednesday Poster Session

**Track Classification:** MC5: Beam Dynamics and EM Fields: MC5.D07: High Intensity Circular Machines Space Charge, Halos