



Contribution ID: 775 Contribution code: **THPA060**

Type: **Poster Presentation**

Development of a Tool for Cavity Failure Compensation in Superconducting Linacs: Progress and Comparative Study

Thursday 11 May 2023 16:30 (2 hours)

Reliability in high power hadron accelerators is a major issue, particularly for Accelerator Driven Systems (ADS). For example, the Japan Atomic Energy Agency (JAEA) ADS maximum frequency of beam trips longer than 5 min was set to 42 per year. A significant number of breakdowns are caused by the failure of accelerating cavities or by their associated systems. Hence, we studied how these can be effectively reduced. To this end, we developed the numerical tool LightWin that aims to determine the compensation settings for any superconducting (SC) linac automatically and systematically [1]. This tool has been successfully used for the MYRRHA SC linac. In this work, we applied LightWin to compensate for several failure scenarios involving the last section of the JAEA linac and compared the associated retuned settings and beam performance to those found in a previous study [2] with TraceWin.

Funding Agency

Footnotes

[1] A. Plaças et al. DOI: 10.18429/JACoW-LINAC2022-TUPORI04

[2] B. Yee-Rendon et al. DOI: 10.1103/PhysRevAccelBeams.25.080101

I have read and accept the Privacy Policy Statement

Yes

Primary author: PLAÇAIS, Adrien (Laboratoire de Physique Subatomique et de Cosmologie)

Co-authors: BOULY, Frédéric (Laboratoire de Physique Subatomique et de Cosmologie); YEE-RENDON, Bruce (Japan Atomic Energy Agency)

Presenter: PLAÇAIS, Adrien (Laboratoire de Physique Subatomique et de Cosmologie)

Session Classification: Thursday Poster Session

Track Classification: MC6: Beam Instrumentation, Controls, Feedback and Operational Aspects: MC6.T22: Reliability, Operability