



Contribution ID: 2805 Contribution code: SUPM012

Type: **Poster Presentation**

## **Impedance-induced beam observables in the CERN Proton Synchrotron**

*Sunday, 7 May 2023 16:00 (2 hours)*

Impedance-induced tune shifts and instability growth rates in the CERN Proton Synchrotron are studied thanks to the recently updated impedance model of the machine. Calculation of these beam observables are obtained using both Vlasov solvers and macroparticle tracking simulations, and are compared with those observed during dedicated measurement campaigns. Thanks to improvements in the measurement procedure, including the careful monitoring of losses, bunch length, linear coupling and chromaticity, uncertainties on the tune shifts were noticeably reduced compared to previous years. Finally, the effect of linear chromaticity on tune shift slopes and growth rates has been examined, allowing for a detailed comparison with both past measurements and simulations.

### **Funding Agency**

### **Footnotes**

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

Yes

**Primary author:** JOLY, Sébastien (European Organization for Nuclear Research)

**Co-authors:** SALVANT, Benoit (European Organization for Nuclear Research); IMESCH, Gil (European Organization for Nuclear Research); DELRIEUX, Marc (European Organization for Nuclear Research); MIGLIORATI, Mauro (Istituto Nazionale di Fisica Nucleare - Sez. Roma 1); MOUNET, Nicolas (European Organization for Nuclear Research)

**Presenter:** JOLY, Sébastien (European Organization for Nuclear Research)

**Session Classification:** Student Poster Session