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## Impedance and thermal studies of the CERN SPS Wirescanners and mitigation of wire heating

*Wednesday, 22 May 2024 16:00 (2 hours)*

All wires of the four CERN SPS rotational wirescanners broke when increasing the beam intensity towards the target for the LHC Injector Upgrade in 2023. Impedance and thermal studies were immediately launched, with simulations and measurements indicating that beam induced heating from resonant modes on the thin wire could be sufficient to cause these breakages. Mitigation measures to displace electromagnetic losses away from the wire were proposed and implemented. This allowed a much higher beam intensity to be reached, close to the LIU target. Simulations now predict that the modified wirescanners can sustain the LIU beam parameters.

### Footnotes

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### Paper preparation format

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### Region represented

Europe

**Primary author:** SITO, Leonardo (University of Napoli Federico II)

**Co-authors:** SALVANT, Benoit (European Organization for Nuclear Research); ZANNINI, Carlo (European Organization for Nuclear Research); ANTUONO, Chiara (European Organization for Nuclear Research); VOLLINGER, Christine (European Organization for Nuclear Research); DE LA FUENTE, Elena (European Organization for Nuclear Research); CARRA, Federico (European Organization for Nuclear Research); RUMOLO, Giovanni (European Organization for Nuclear Research); PAPOTTI, Giulia (European Organization for Nuclear Research); PAPAIOGLOU, Ioannis (European Organization for Nuclear Research); KARPOV, Ivan (European Organization for Nuclear Research); EMERY, Jonathan (European Organization for Nuclear Research); LI, Kevin (European Organization for Nuclear Research); SULLIVAN, Michael (European Organization for Nuclear Research); CALAGA, Rama (European Organization for Nuclear Research); VENESS, Raymond (European Organization for Nuclear Research); ANDREAZZA, William (European Organization for Nuclear Research)

**Presenter:** ZANNINI, Carlo (European Organization for Nuclear Research)

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