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Electropolishing of large copper substrates for FCC_ee SRF cavities

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CERN now possesses both the tools and expertise required to electropolish 400 MHz copper elliptical cavities. This contribution provides a brief overview of the electropolishing setup, the associated interfaces, and the simulation efforts undertaken to design the system and optimize the process. A comparison between simulation data and results from actual processing will be presented and explained. The achievements to date, along with the measures implemented to improve surface stability, will be highlighted. Furthermore, in preparation for processing the 2-cells 400 MHz FCC-ee cavities, the main anticipated challenges will be outlined, along with the proposed strategies to address them.

Author: MARQUES ANTUNES FERREIRA, Leonel (CERN)

Presenter: MARQUES ANTUNES FERREIRA, Leonel (CERN)
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