



Impedance measurements

Project code	70
Supervisor	Sergio Calatroni
Department	TE
Title	
Impedance measurements	
Description	
<p>The development of novel designs of vacuum components (interconnections, special vacuum chambers, etc.) often implies their validation from the point of view of beam impedance. You will give support to the group for these studies when needed, in terms of both design and experimental validation. In parallel, you will work in collaboration with a PhD student for bringing forward the engineering design and mechanical fabrication of a novel facility for the impedance characterization of LHC- and FCC-type beam screens at cryogenic temperature and eventually in presence of a strong magnetic field. This work requires coordinating among several CERN groups, and will be linked to several ongoing collaborations, including the potential study of High-Temperature Superconductors.</p> <p>The work is done within the Vacuum Surfaces and Coatings group, which takes care of the design, construction, operation, maintenance and upgrade of high & ultra-high vacuum systems for accelerators and detectors, and of coatings, surfaces treatments, surface and chemical analysis for Accelerators and Detectors. You will be part of the Vacuum Studies and Measurement section, in charge of all novel projects and long-term developments of the group.</p>	
Functions and Training Value	
<p>Getting acquainted with UHV components and technology, RF design and technology with a focus on beam impedance issues, cryogenic design and technology.</p> <p>Learning how to lead the development and construction of a significant interdisciplinary experimental facility.</p>	
Qualifications/Skills	
<p>You should have a solid background in RF design and simulations, possibly in relationship with accelerators and beam dynamics, and demonstrated knowledge of mechanical and cryogenic design and engineering, gained during a PhD.</p>	