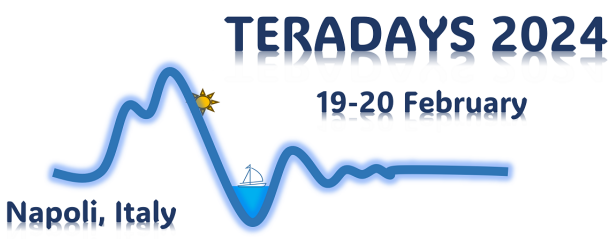

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Material Characterizations in the Sub-THz Region for Particle Accelerators

Content

Coatings are currently used in vacuum chambers of particle accelerators for their effective pumping ability and as mitigation technique of electron cloud effects. At the same time, their presence may affect the surface resistance of the chamber walls, impacting the machine performances by limiting achievable energies and currents. Therefore, an electromagnetic characterization is essential for a comprehensive study of accelerator structures, especially in the upcoming generation of particle accelerators, where the demand for very short bunches makes it increasingly critical to assess material responses in the sub-THz region. In this presentation we will show the electromagnetic characterization of various coating materials using a time-domain method based on THz waveguide spectroscopy.

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