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Vacuum Systems

Thursday 13 March 2025 10:15 (1 hour)

Vacuum systems are an intrinsic part of any accelerators around the world: all particles are circulating under vacuum. This lecture gives rudiments on fundamentals of vacuum science such as units, ideal gas law, partial pressure, mean free path, flow of molecules, conductance, pumping speed and outgassing. An overview of standard vacuum instruments for pressure measurement and pumping is presented. Finally, the specificities of beam–vacuum system interactions in an accelerator are introduced discussing synchrotron radiation, electron cloud and vacuum instability with their side effects of stimulated molecular desorption.

Presenter: BAGLIN, Vincent (CERN)