



Contribution ID: 63

Type: Talk

Design of the CERN Linac4 emittance meter.

The CERN LINAC4 commissioning will start in 2011, at first in a laboratory test stand where the 45 KeV H-source is already installed and presently tested, and later in the LINAC4 tunnel. A movable diagnostics bench will be equipped with the necessary sensors capable of characterizing the H- beam in different stages, from 3 MeV up to the first DTL tank at 12 MeV. In this paper we will discuss the accuracy of the transverse emittance measurement that will be performed with the slit-grid method. The system's mechanical and geometric parameters have been determined in order to achieve the required resolution and sensitivity. Space charge effects during the beam transfer from the slit to the grid and scattering effects at the slit have been considered to determine the overall emittance measurement accuracy. In addition, this paper will present the simulations and calculations done for the estimation of the thermal load on the slit.

Primary author: CHEYMOL, Benjamin (CERN-Univeriste Blaise Pascal)

Co-authors: BRAVIN, Enrico (CERN); RONCAROLO, Federico (CERN); RAICH, Uli (CERN)

Presenter: CHEYMOL, Benjamin (CERN-Univeriste Blaise Pascal)