1st PACMAN Workshop



Contribution ID: 11

Type: not specified

EM field alignment of the CLIC accelerating structure with help of WFM signals

Monday 2 February 2015 16:00 (30 minutes)

Summary

The CLIC TD24 accelerating structure is a traveling wave structure working on the accelerating monopole TE010 mode at 12 GHz. It consists of two coupling cells and 24 disks which its transverse section decreases gradually in order to achieve the 100MV/m constant gradient required for CLIC.

The RF is coupled in each disk though an iris of 5.5 mm diameter of mean aperture. With such small apertures, the alignment of the electrical center of the accelerating structure with respect to the beam is extremely important since the effect of the wakefields could be very harmful for the beam creating, for instance, beam instability and shape deformation of the bunch.

It has been determined that the electrical center of the accelerating structure should be aligned with respect to the center of the wakefield monitors with an accuracy of 3,5 um.

A test bench has been designed in which a dipole mode at 18 GHz is going to be excited in the structure and measured using the wakefield monitors that are ment for alignment proposes.

The results of the simulation work are going to be presented as well as the laboratory strategy in mind in order to achieve the goals.

Presenter: Mrs GALINDO MUNOZ, Natalia (CERN)

Session Classification: WP 4