Abstract

Multipactor discharge is the most serious problem for operation superconducting cavity at high RF power. CESR (Cornell electron-positron stroge ring) is the superconducting RF cavity which is used in a National Synchrotron Radiation Research Center(NSRRC) in Taiwan. We intend to design a multipacting free waveguide for the high RF power couplers of Cornell SRF module. The secondary electron yield of metallic conductor playes a critical role in the development of multipactor discharge. By reducing the secondary yield below unity, multipactor can be eliminated. The equation of motion particles between parallel plats is used as the basis for Monte-Carlo method within a wide range of parameter such as the angular distribution and spread of initial velocity of secondary electrons.