SPL CAVITY DEVELOPMENT

G. Olry [IPN, Orsay, France]

Abstract

The Superconducting Proton Linac (SPL) is planned as a 4MW machine in pulsed operation at CERN. Two families (beat = 0.65 and β = 1.0) of 5 cell superconducting elliptical cavities, operating at 704.4 MHz, will be used to accelerate H– beam from 160 MeV up to 5 GeV. One of the main challenge is the nominal gradient required for both cavities type: 19 MV/m for the β=0.65 and 25 MV/m for the β=1. Several prototypes of elliptical cavities have been studied by different laboratories (CERN, CEA/Saclay, BNL, IPN Orsay) through a large collaboration (EuCARD program, French and US in-kind contribution...) and are now ready for fabrication. First of all, we will present the work done on RF and mechanical optimizations as well as the studies on HOMs. Then, we will give an overview of the short-cryomodule design, housing four β=1.0 cavities, which should be tested at CERN.

CONTRIBUTION NOT RECEIVED