

Industrial Production of Superconducting Cavities,
E. CHIAVERI, CERN - Many laboratories around the world, notably CEBAF, CERN, DESY and KEK, after a period of research and development, are presently or have recently been involved in the industrial production of a large number of RF superconducting cavities. CERN, instead of using the standard bulk niobium technique, has developed the more complex Nb/Cu technology (niobium film deposited by magnetron sputtering inside a copper cavity). The intention of this paper is to present the transfer of this technology to three European firms [ANSALDO, CERCA and SIEMENS (now ACCEL)]. Emphasis will be placed on the major challenge to the three firms of mastering a very complex procedure which requires high quality control at every stage of the production, in order to reach a very demanding final RF performance [$Q(6 \text{ MV/m}) = 3.4 \times 10^9$ at 4.5 K].