

Superconductive Cavity Features Improvement for High Accelerator Fields, J.P. CHARRIER, B. COADOU, B. VISENTIN, CEA/SACLAY - DSM/DAPNIA/SEA - 91191 GIF/YVETTE - FRANCE - In Superconductive cavities, the accelerator electric field E_{acc} is theoretically limited around 50 MV/m. Experimentally, as general rule the cavity quality factor Q decreases for fields higher than 20 MV/m. Before the cavity cool down to 1.7 K, a simple cavity heating process (100°C - 70 hours), allows to improve by a factor two, the slope in $Q(E_{acc})$ curve and rejects the thermal breakdown position to higher accelerator field values. The origin of the phenomenon will be discuss: interstitial impurities are probably get into the surface during the cavity cleaning process (high pressure water rinsing at 85 bar). The cavity heating removes these impurities, modifies the Residual Resistance Ratio (RRR) of the Niobium surface and improves the thermal conductivity.