

**Operational Experience with the LEP2 SC Cavity System, D. BOUSSARD, CERN** - The LEP energy upgrade programme (LEP2) consists of increasing the  $e^+e^-$  colliding beams' energies far beyond the W pair production threshold, up to 95 GeV. The large increase in accelerating voltage required, from 250 MV for LEP1 at 45 GeV to 2700 MV at 95 GeV, will be provided by 272 superconducting (sc) cavities. Almost all are of the Nb/Cu type, with a nominal accelerating field of 6 MV/m at 352 MHz. A first set of 56 sc cavities was installed during 1995 and made possible a short physics run at energies of 65, 68 and for a short time 70 GeV. The experience gained during this run, as well as that obtained previously on the machine, will be presented. The cavities and their upgraded ancillary equipment worked satisfactorily at their nominal field and with the LEP beam currents ( $\sim 7$  mA). Apart from the usual problems of debugging many new pieces of equipment, the difficulties encountered were microphonic oscillations, together with effects due to the much larger impedance at the RF frequency. An RF feedback working on the vector sum of the signals from the eight cavities driven by a common klystron has been implemented to address these problems. The next steps towards the completion of the LEP2 programme will also be presented.