

Longitudinal and Transverse Impedances of a Hole on a Thin Coaxial Beam Pipe, S. DE SANTIS, M. MIGLIORATI, L. PALUMBO, Rome University and INFN-LNF, M. ZOBOV, INFN-LNF - We derive the impedance of a circular hole in the inner tube of a coaxial beam pipe. The method used differs from the classical Bethe's theory since, in the calculation of the magnetic and electric dipole moments, we take into account also the scattered fields in the aperture to match the power conservation law. The low frequency impedance shows a real contribution accounting for the TEM waves propagating within the coaxial waveguide.