

**Measurements of Modes in the HERA-B Vertex Chamber Excited by the HERA Proton Beam,**  
R. WANZENBERG, M. WENDT, DESY - The vertex chamber of the HERA-B experiment presents a cavity for the HERA proton beam. An rf-shielding is needed to reduce the coupling impedance to avoid exciting instabilities of the beam and heating of vertex detector components. A small loop antenna is installed inside the vertex chamber to detect modes excited by the beam. In the years 1996 and 1997 three different types of rf-shielding have been tested: a pipe with holes, four strips and eight wires. The measured line spectra are compared for these different shielding. The absolute impedance can not be calculated from the measurements since the antenna is not calibrated. Nevertheless, the Q-values of a few modes are estimated from the measured revolution line spectra. Furthermore, the heating of the eight wires due to image currents is discussed and compared with the operation experience during the machine shifts in October 1997 which indicates heating problems for that choice of rf-shielding.