

First Estimate of the Overall HERA-p Transverse Impedance by Means of Growth Rate Measurements, F. GALLUCCIO, INFN Napoli, Italy; F. WILLEKE, DESY Hamburg, Germany - A transverse coherent amplitude growth is occasionally detected in the HERA proton ring for small negative values of the chromaticities. This phenomenon has been carefully studied, and the characteristic behaviour of an head-tail instability has been evidenced. The overall transverse impedance of the machine is now under investigation. Systematic growth rate measurements were performed during the machine studies of November 1994; they were repeated in December 1995 also in the presence of controlled linear coupling which, in the mean time, had shown to be a crucial ingredient for the instability to occur. The results of these measurements will be shown: they were found reasonably consistent among each other, therefore allowing us to give an estimate of the effective transverse impedance of HERA-p. The influence of linear coupling on the instability was also studied on a simpler model by computer simulations; the results of this study will be shown as well.