

Emittance Manipulations at BESSY I*, P. KUSKE, BESSY, Berlin - At the VUV synchrotron radiation light source BESSY I transverse and longitudinal emittances are routinely increased in order to reduce lifetime limiting Touschek losses. In the longitudinal plane the phase of the RF cavity voltage is modulated close to three times the synchrotron frequency. The transverse emittance is increased by exciting the beam with striplines and white noise centered around the vertical betatron resonance frequency. Experimental results will be presented based primarily on beam loss rate measurements as functions of the excitation frequency and the beam current. In the longitudinal plane these observations can be explained by a parametric resonance process, however, for the increase of the vertical emittance a satisfactory explanation has not yet been found.

* Funded by the Bundesministerium für Bildung, Forschung und Technologie and by the Land Berlin.