

Effect on the Vacuum Chamber Tapering on Impedance Budget in Storage Rings,
A. MOSNIER, SOLEIL (France); P. BRUNELLE, LURE (France); A. NOVOKHATSKI, BINP Novosibirsk (Russia); F. ORSINI, SOLEIL (France) - It is well-known that wakefield effects due to steep vacuum chamber transitions can be decreased by tapering the steps with small angles. However, even very long taper transitions can give rise to harmful high frequency resonators and contribute to the microwave instability. Time domain calculations were carried out on various transitions, like the ones needed at both ends of RF accelerating cavities or insertion devices. The effects of these tapers on longitudinal dynamics are found sizeable and results are discussed in the case of the SOLEIL storage ring light source.