

**Multiturn Injection into Accumulators for Heavy Ion Inertial Fusion,** H. SCHÖNAUER, CERN; C. PRIOR, RAL - Injection of heavy ions in high-current rings is complicated by the impossibility to use charge exchange in material foils to produce singly charged heavy ions (to keep space charge manageable) on one hand and by the necessity of rigorously limiting losses to  $\approx 1\%$  on the other. With these constraints, the number of turns injectable by conventional multiturn injection is very limited. This number is increased by a two-dimensional technique of painting Lissajous-like patterns in x-y space, using an inclined or, better, a corner septum. Further improvement appears possible by simultaneous stacking in momentum space through ramping of the linac energy. This technique entails severe lattice constraints like strong dispersion bumps. These considerations are discussed and simulation examples presented.