

Data Generation for SIS and Beam Lines for the GSI Therapy Project, B. FRAN CZAK, GSI Darmstadt - The GSI cancer therapy project with carbon ions in the energy range from 80 to 430 MeV/u makes it necessary to tune the heavy ion synchrotron SIS and the beam lines to about 250 different energies in this range. Since the beam has to be delivered on demand in various energy sequences, no on-line tuning or correction of set values of accelerator components can be permitted. To achieve this an additional magnet ramp after extraction is added to the normal SIS acceleration scheme. Thus all dipoles and quadrupoles perform the same magnet cycle independently of the final energy. Certain sensitive machine parameters, e.g. the fast extraction quadrupole, usually need a small energy dependent adjustment. These corrections were determined experimentally for about ten energies and the values for the others are obtained by interpolation. Thus it is possible to set the SIS to any desired energy and deliver the beam on the target using only precalculated set values.