

Limits in the Design of Short Solenoids for use in Matching into RFQs, C.P. BAILEY, RAL - An examination of the limits of solenoid length to bore ratio for a practical solenoid design is described, with reference to the linear matrix representation. Tracking of a four dimensional particle distribution through a finite element model of a solenoid design is compared with the matrix transform of the phase space ellipses describing the distribution. A design is presented based on these results for the solenoid matching system between the ion source and RFQ for the new ISIS preinjector.