

Fringing Fields in Low-Beta Magnetic Elements,
M. BASSETTI, C. BISCARI, INFN-LNF - The effect of the fringing fields in the low beta region of DAFNE are investigated. Due to the crossing angle the beam trajectory passes off axis in low beta quadrupoles and detector solenoids. The modification of the linear optics due to the magnetic field profile and to the linear expansion around the trajectory of the field components is considered. The non-linear fringing field multipolar expansion is deduced from the longitudinal behaviour of quadrupole field gradients and solenoidal longitudinal magnetic fields. Its effects on the beam dynamics are studied.