**Experimental Insertions made of Two Symmetric Triplets**, E.T. D'AMICO, <u>G. GUIGNARD</u>, CERN -

The reported study is based on the analytical treatment developed for an experimental collider insertion made of two symmetric triplets,the inner triplet located near the interaction point (IP) and the outer triplet preceding a regular lattice. These two triplets are assumed to be symmetric in their geometry and quadrupole strengths, but not in their Twiss parameters. The method is applied to an insertion of the type of an experimental LHC insertion. The drift between the IP and the first quadrupole is fixed and the inner triplet is constrained to achieve a beta-crossing with equal and opposite slopes (alpha-values) in the two planes. The outer triplet acts then as a FODO transformer from beta-crossing to beta-crossing in order to match the lattice. The analysis provides in a given parameter interval all the existing solutions for the distance between triplets and the total insertion length, as functions of one gradient and the quadrupole separation in the inner triplet. The variation of the quadrupole strengths when the beta-functions increase at the IP (detuning) is studied and the extension from thin lens to thick lens illustrated.