

Modular Optical Design of the LHC Experimental Insertions, A. FAUS-GOLFE, J.P. KOUTCHOUK, A. VERDIER, S. WEISZ, CERN - To optimize the use of space, the LHC insertions combine dispersion matching (arc and ring separation/recombination), beam focalization at the interaction point and betatron phase advance control within a unique functionality. In this paper, we show that the significant dispersion produced by the separation/recombination dipoles can be treated separately, allowing a classical modular approach of the insertion design. This methodology alleviates pitfalls such as the strong correlation between the polarity of the arc focusing and of the separation/recombination dipoles. It improves the flexibility and robustness of the lattice.