

## FOREWORD

The Workshop on LHC Interaction Region Correction Systems was held at Brookhaven National Laboratory, Upton, New York, on 6 and 7 May 1999. It was attended by 25 participants from 5 institutions.

The performance of the Large Hadron Collider (LHC) at collision energy is limited by the field quality of the interaction region quadrupoles and dipoles. In three sessions the workshop addressed the field quality of these magnets, reviewed the principles and efficiency of global and local correction schemes and finalized a corrector layout.

The session on Field Quality Issues, chaired by J. Strait (FNAL), discussed the progress made by KEK and FNAL in achieving the best possible field quality in the interaction region quadrupoles. Results of simulation studies were presented that assess the effects of magnetic field errors with simulation studies. Attention was given to the uncertainties in predicting and measuring field errors.

The session on Global Correction, chaired by J.-P. Koutchouk (CERN), considered methods of reducing

the nonlinear detuning or resonance driving terms in the accelerator one-turn map by either sorting or correcting. The session also discussed the crossing angle dependence of the dynamic aperture and operational experience from LEP.

The session on Local Correction, chaired by T. Taylor (CERN), discussed the location, strength and effectiveness of multipole correctors in the interaction regions for both proton and heavy ion operation. Discussions were based on technical feasibility considerations and dynamic aperture requirements. The work on linear corrections in the interaction regions was reviewed.

We thank all participants for their contributions to the success of the workshop. We are grateful to Pam Manning, Rhianna Bianco and Waldo MacKay for their support in organizing the workshop and in preparing the proceedings. We hope that these proceedings are a useful reference for interaction region correction systems in general and the LHC's in particular.

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