

Measurements of the Betatron Functions and Phases in RHIC*, J. KEWISCH, S. PEGGS, T. SATOGATA, S. TEPIKIAN, D. TRBOJEVIC, BNL - The Relativistic Heavy Ion Collider (RHIC) consists of the two rings with six fold symmetry. The six interaction regions (IR)s are connected with twelve FODO cells. RHIC quadrupoles in the interaction regions have independent tuning capability. The betatron functions will be measured and corrected by a combination of three methods. First, tunable IR quadrupoles will be adjusted to measure betatron functions at that location through the change in tune. Second, sinusoidal coherent dipole oscillations will be used to measure the betatron phases and functions (as performed in LEP). Third, a correction dipole kick technique will be used (as at Fermilab). Special attention will be given to the "betatron squeeze" procedure by which the two large experiments PHENIX and STAR will achieve minimum betatron functions between 1 and 2 m.

* Work performed under auspices of the US Department of Energy.