

**Magnetic Design of Dipoles for LHC Insertion Regions,** R. GUPTA\*, A. JAIN, P. WANDERER, E. WILLEN, BNL - A number of dipole magnets for the insertion regions of the LHC will be built at BNL. All the magnets will use the same 80 mm aperture coil design as was used for RHIC arc dipoles. The D3A and D3B dipoles are designed as single aperture magnets due to a large separation between beams (400 mm and 382 mm) in these regions. The dipoles for the D4A and D4B regions will be twin aperture magnets. An oblate shaped yoke design with a vertical height of 55 cm is being developed for the twin aperture dipoles in order to keep saturation induced harmonics below 1 unit at 25 mm radius, while allowing the use of the standard LHC cryostat design. Details of the yoke design and the expected field quality in these dipoles will be presented.

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