

**Design of a High Gradient Quadrupole for the LHC Interaction Regions,** R.C. GUPTA, BNL\*;  
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J.M. VANOORT, LBNL\*\*\* - A collaboration of  
FNAL, LBNL and BNL is currently engaged in the  
design of a high gradient quadrupole suitable for use in  
the LHC interaction regions. The cold iron design  
incorporates a 2-shell,  $\cos 2\theta$  coil geometry with a  
70 mm aperture. This paper summarizes the progress  
on a magnetic and mechanical design that meets the  
requirements of gradient ( $> 250$  T/m), operation at  
1.8K, high field quality and provision for adequate  
cooling in a high radiation environment.

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