

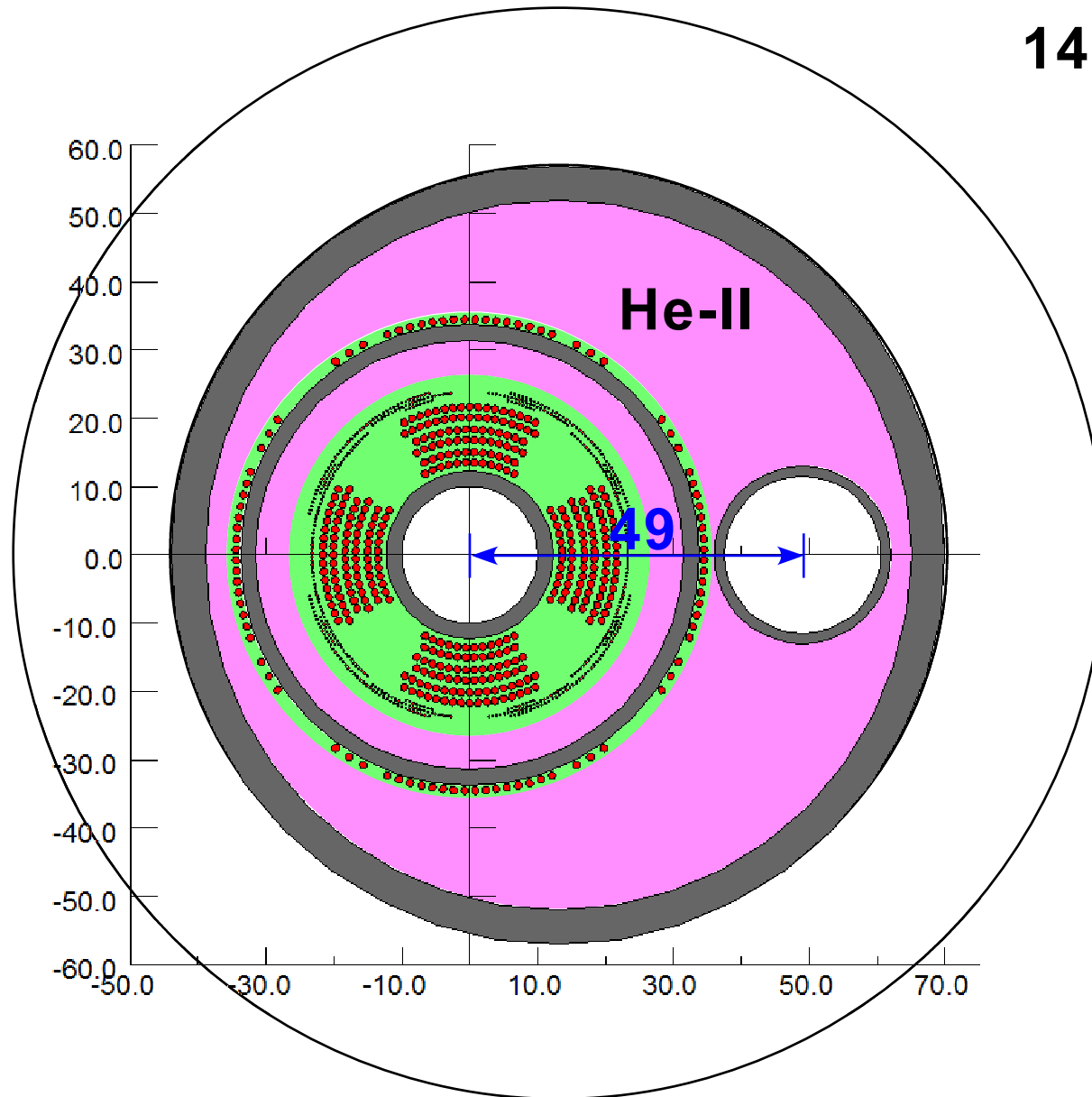
Shield Coil

For $I_o = 704$ A we have
 $G_{inner} = 148.2$ T/m
 $G_{outer} = -8.2$ T/m for
 $G = 140$ T/m net gradient

Here we assume the shield coil runs in series with the inner quadrupole.
Coil outer surface has 71.2 mm OD.

Cold extraction line beam pipe.

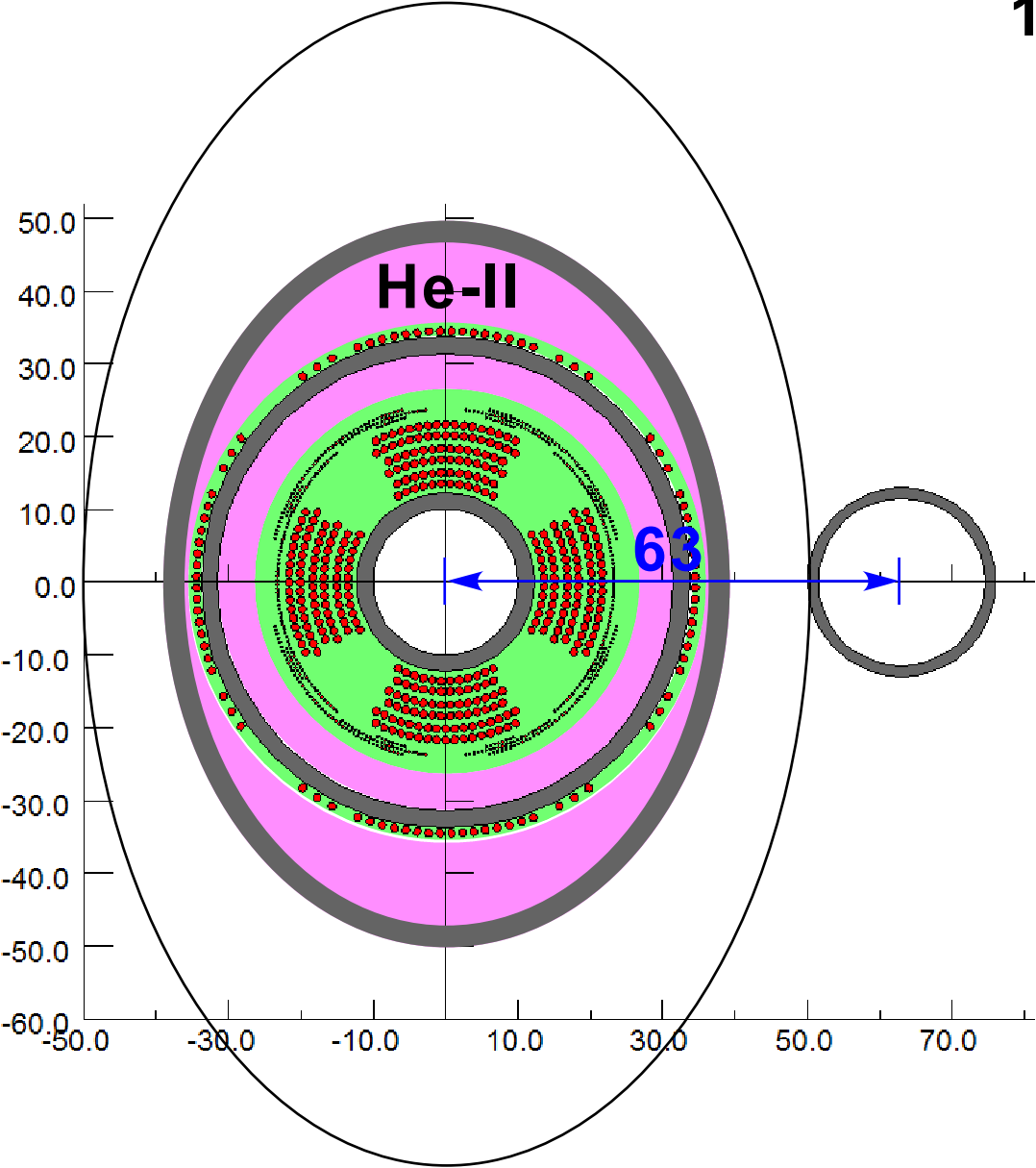
14 mr @ $L=3.5$ m
 $L^*=3.51$ m



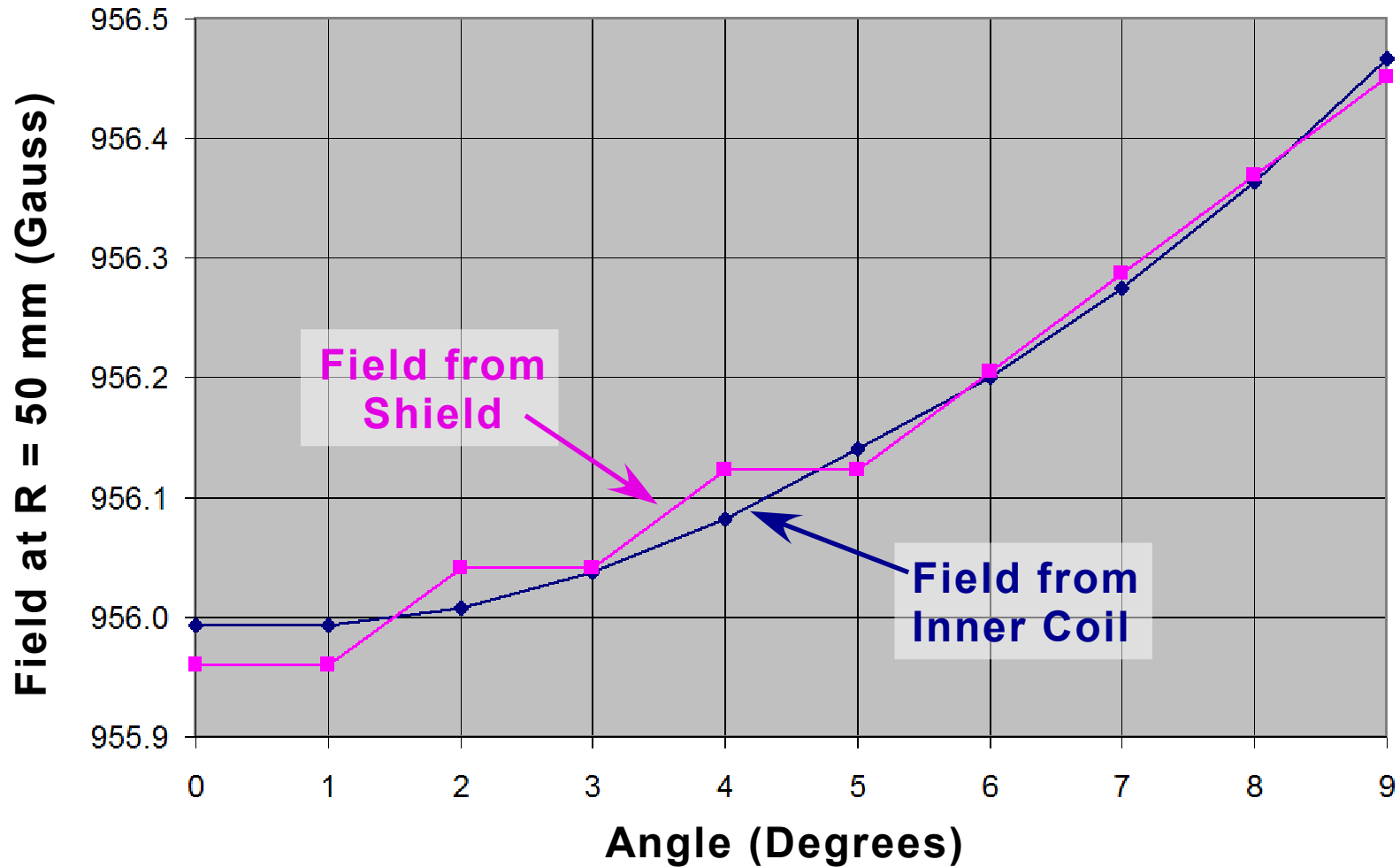
20-Sep-05 B. Parker

Warm extraction line beam pipe.

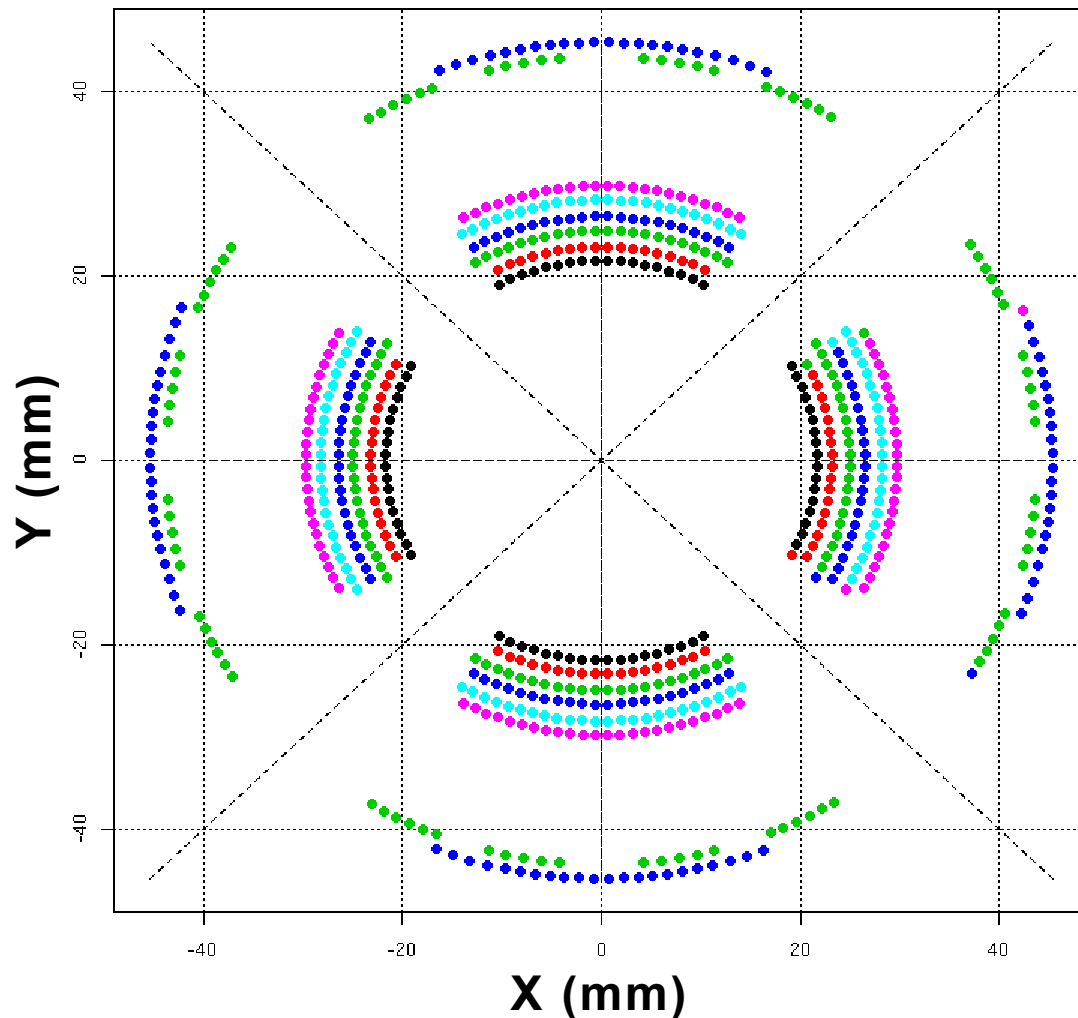
14 mr @ L=4.5 m
L*=4.51 m



External field as a function of angle above the magnet midplane at R = 50 mm



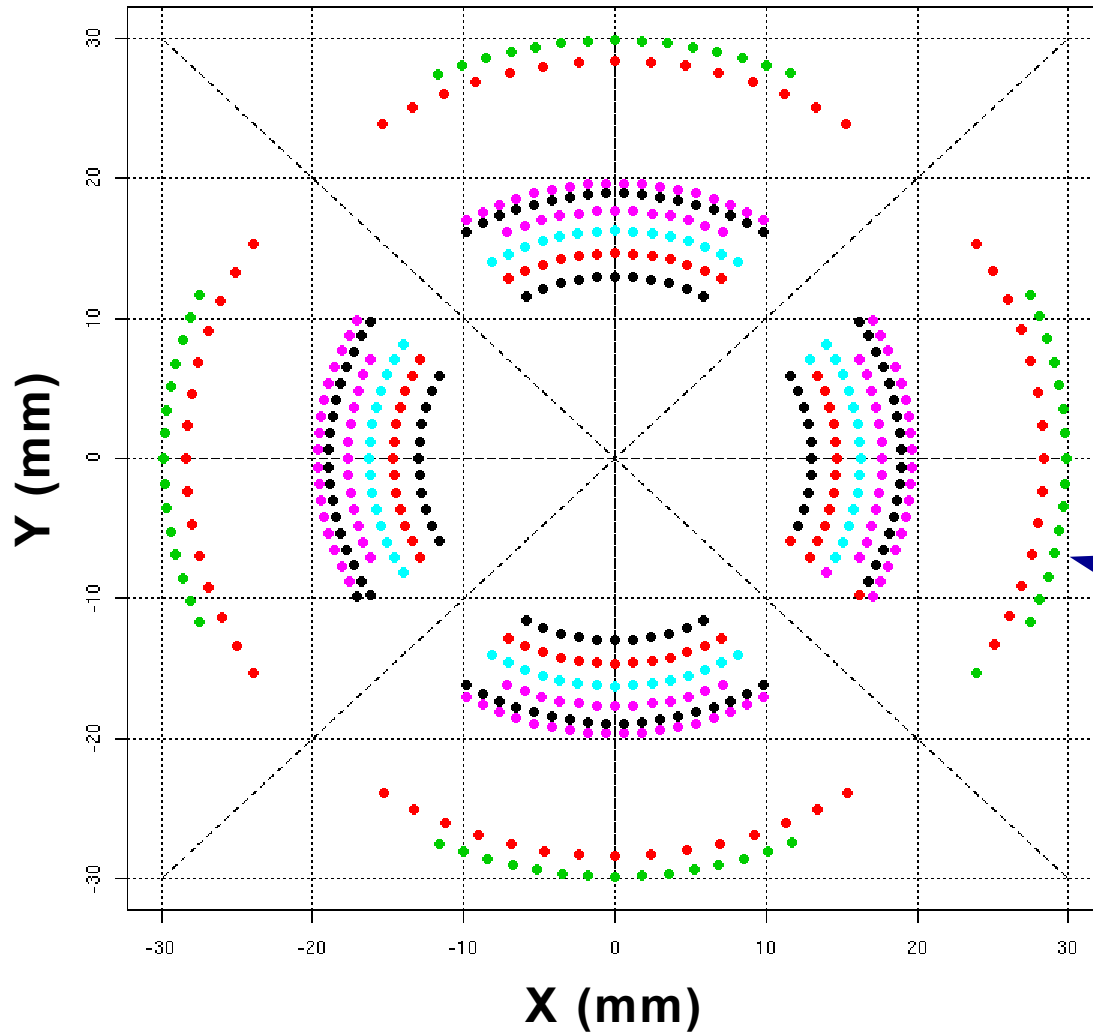
Design for Shielded Extraction Line Quad with 36 mm ID Clear Aperture



For $I_o = 760$ A we have
 $G_{inner} = 98$ T/m
 $G_{outer} = -11$ T/m for
 $G = 87$ T/m net gradient

20-Sep-05 B. Parker

Design for the QT Prototype Shield Coil Winding



For $I_0 = 748$ A we have
 $G_{\text{inner}} = 157.5$ T/m
 $G_{\text{outer}} = -17.5$ T/m for
 $G = 140$ T/m net gradient

Shield coil kept small to fit in existing dewar but this design does not leave enough space for He-II between the inner coil and the shield coil.

John has just started winding this magnet.