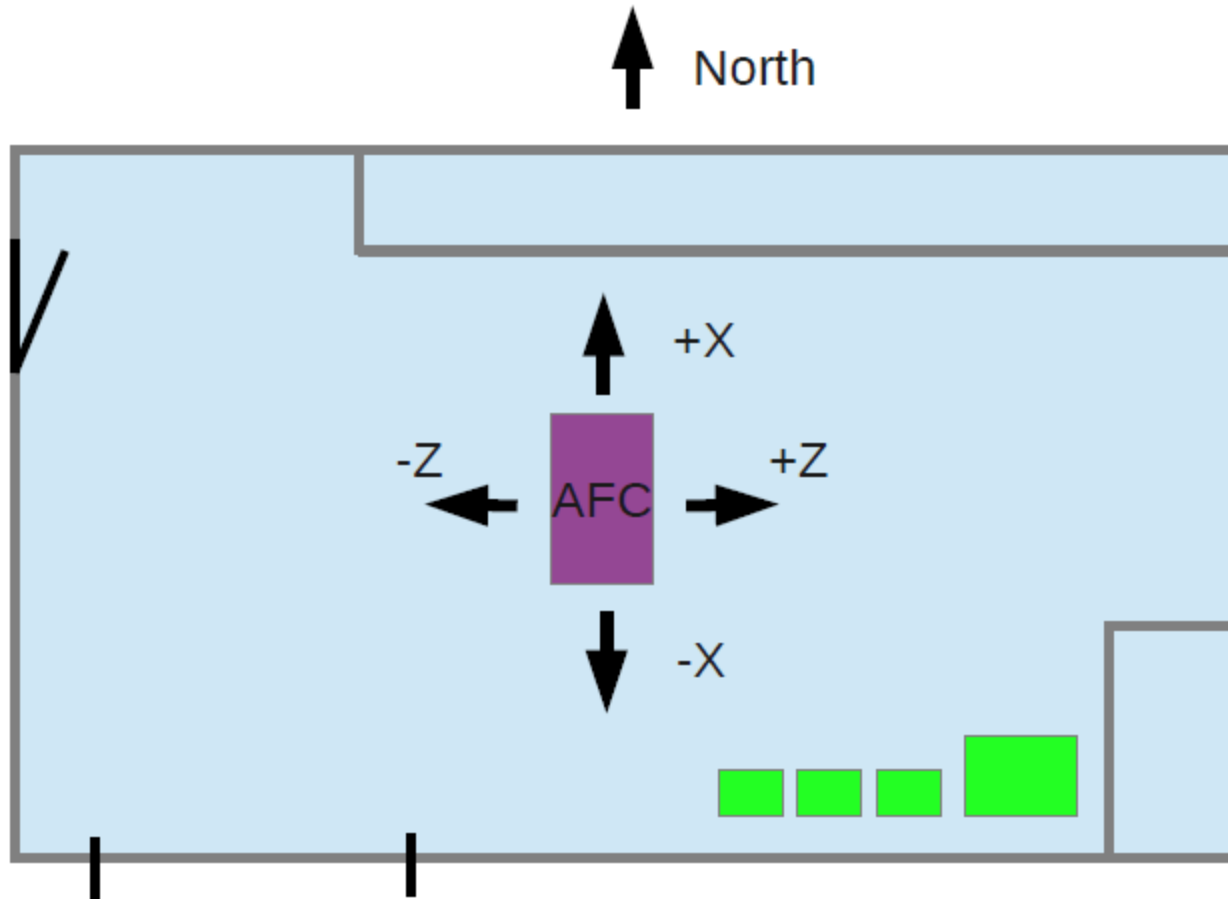


R9 Model Comparisons

- Measurements taken in R9 whilst AFC in solenoid mode at 114A using AlphaLab Vector/Magnitude Gaussmeter.
 - Spatial resolution ~2cm
 - Gaussmeter resolution ~1%
- Data taken with probe has been compared to two models from Melissa:
 - Model without walls
 - Model with 3mm thick tenten steel walls on North and East sides of R9
- Both models omit electronics, metal in floor and store room.

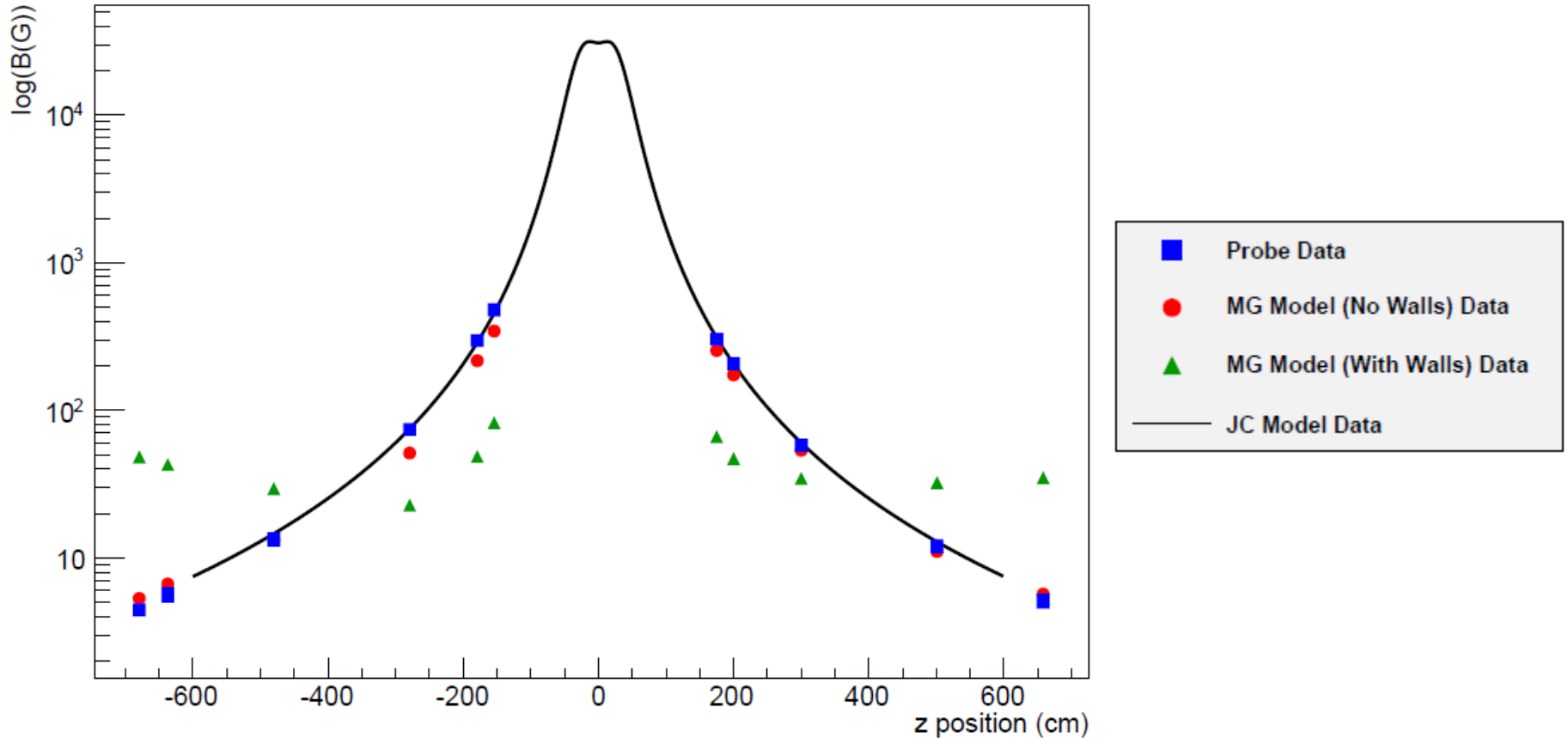
Reminder of hall layout :



In following slides, $y=0$ is taken to be at the centre of the bore.

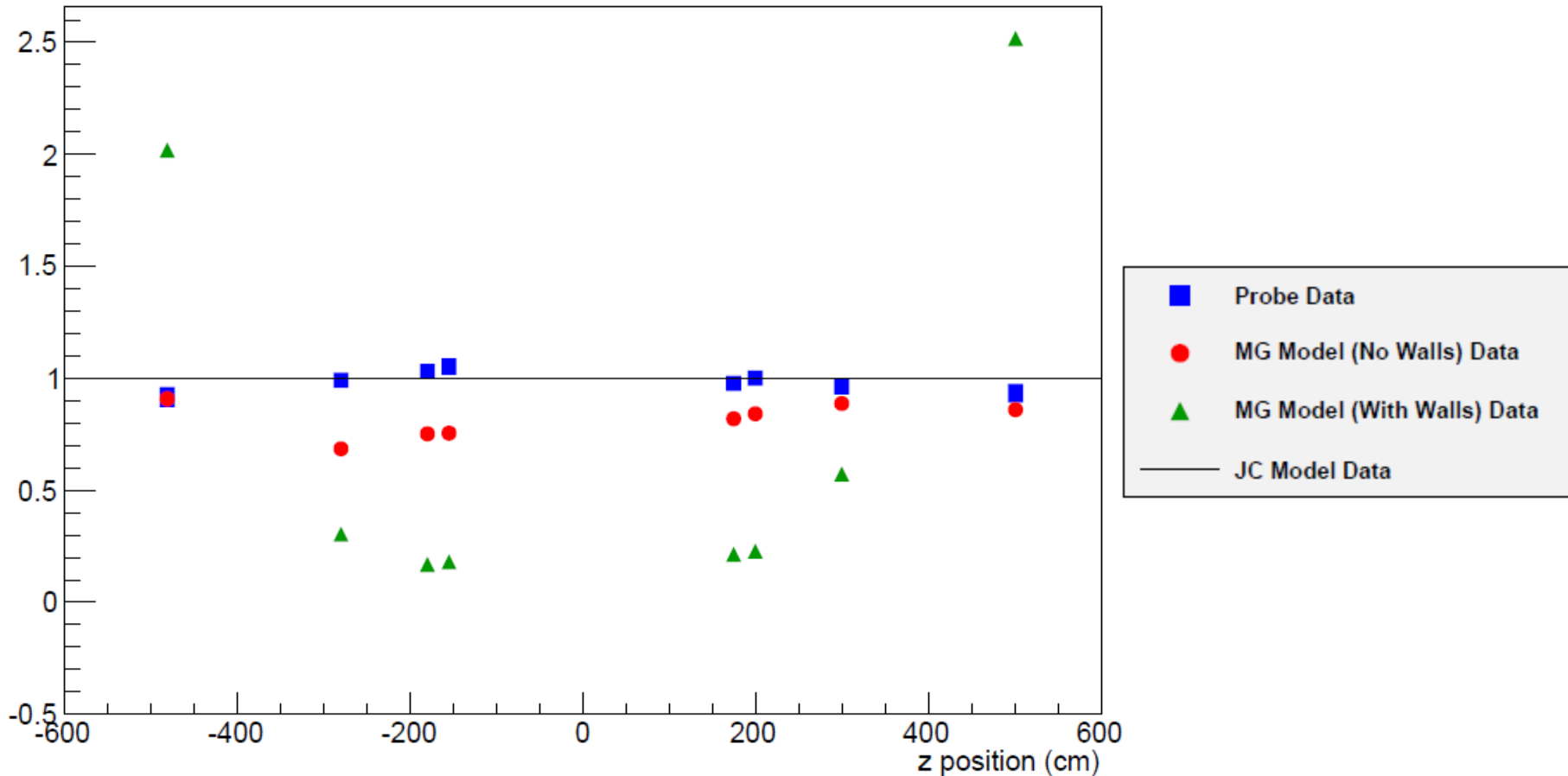
Field at bore height along z axis

Comparing model data to probe data at $x=0, y=0$



Blue points are measurements, red and green points are from Opera models, black line is Biot-Savart prediction.

Field at bore height along z axis



Blue points are measurements, red and green points are from Opera models, black line is Biot-Savart prediction. Model and probe data have been normalised to B-S prediction

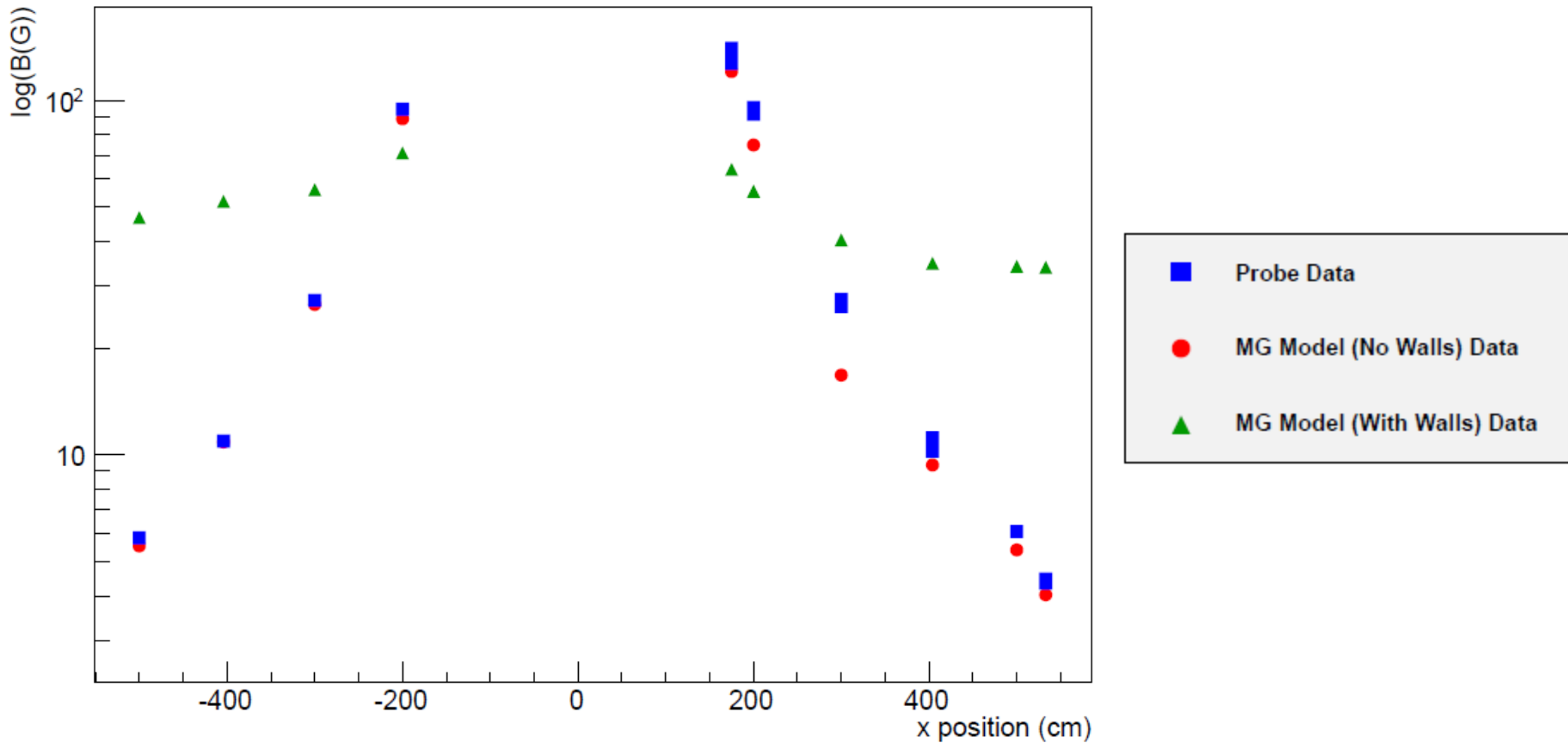
Summary

- Good agreement between measurements and the model without walls.
 - There appears to be slightly better agreement in $-x$ than in $+x$ (slides 7, 10, 11, 13).
- In the model that includes walls, walls are clearly having too strong an effect.
- Received a new model (with walls) today from Melissa so will perform those comparisons next.

Additional Plots

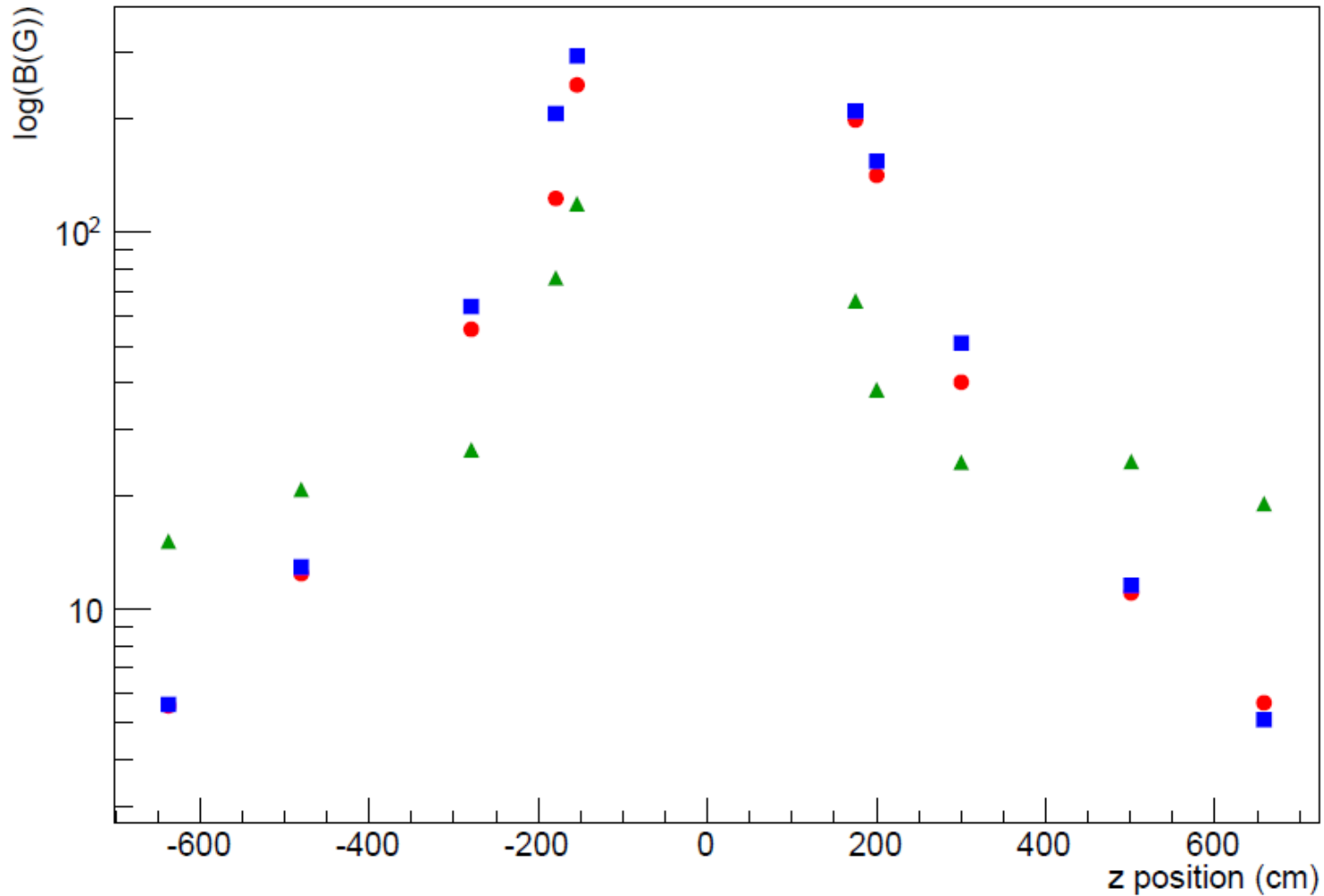
Field at bore height along x axis

Comparing model data to probe data at $y=0, z=0$



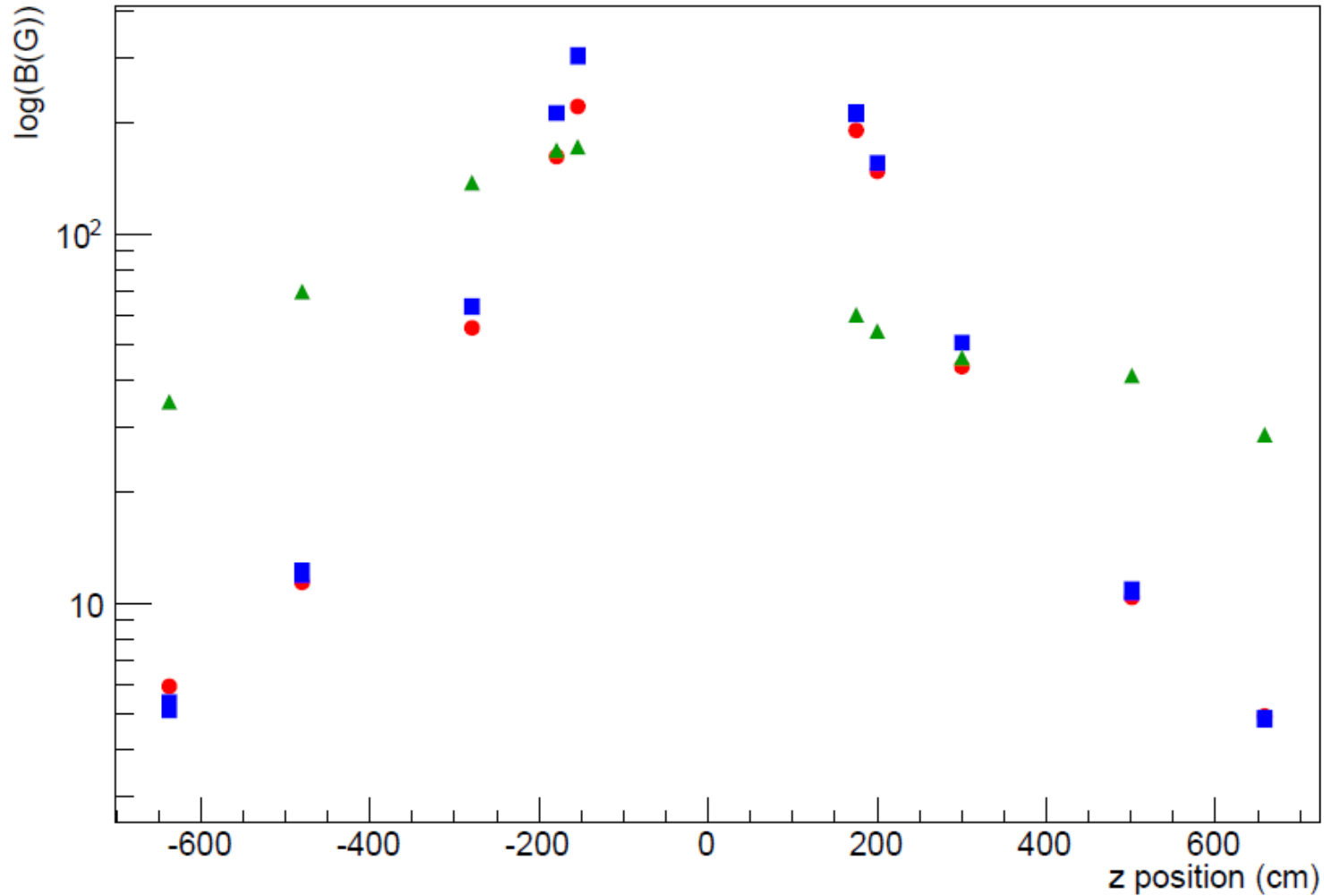
Field along z axis at +80cm from bore

Comparing model data to probe data at $x=0, y=80\text{cm}$



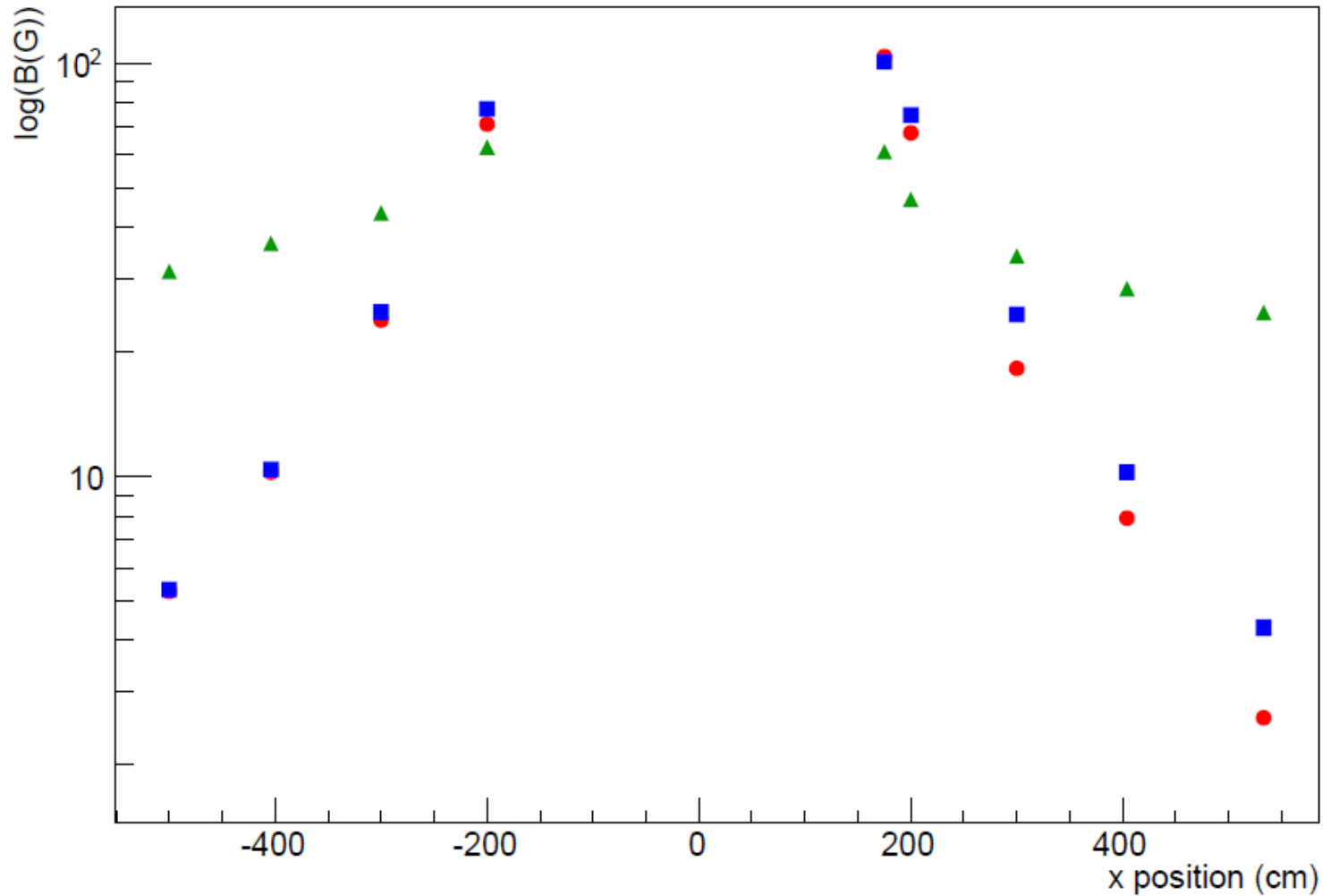
Field along z axis at -80cm from bore

Comparing model data to probe data at $x=0, y=-80\text{cm}$



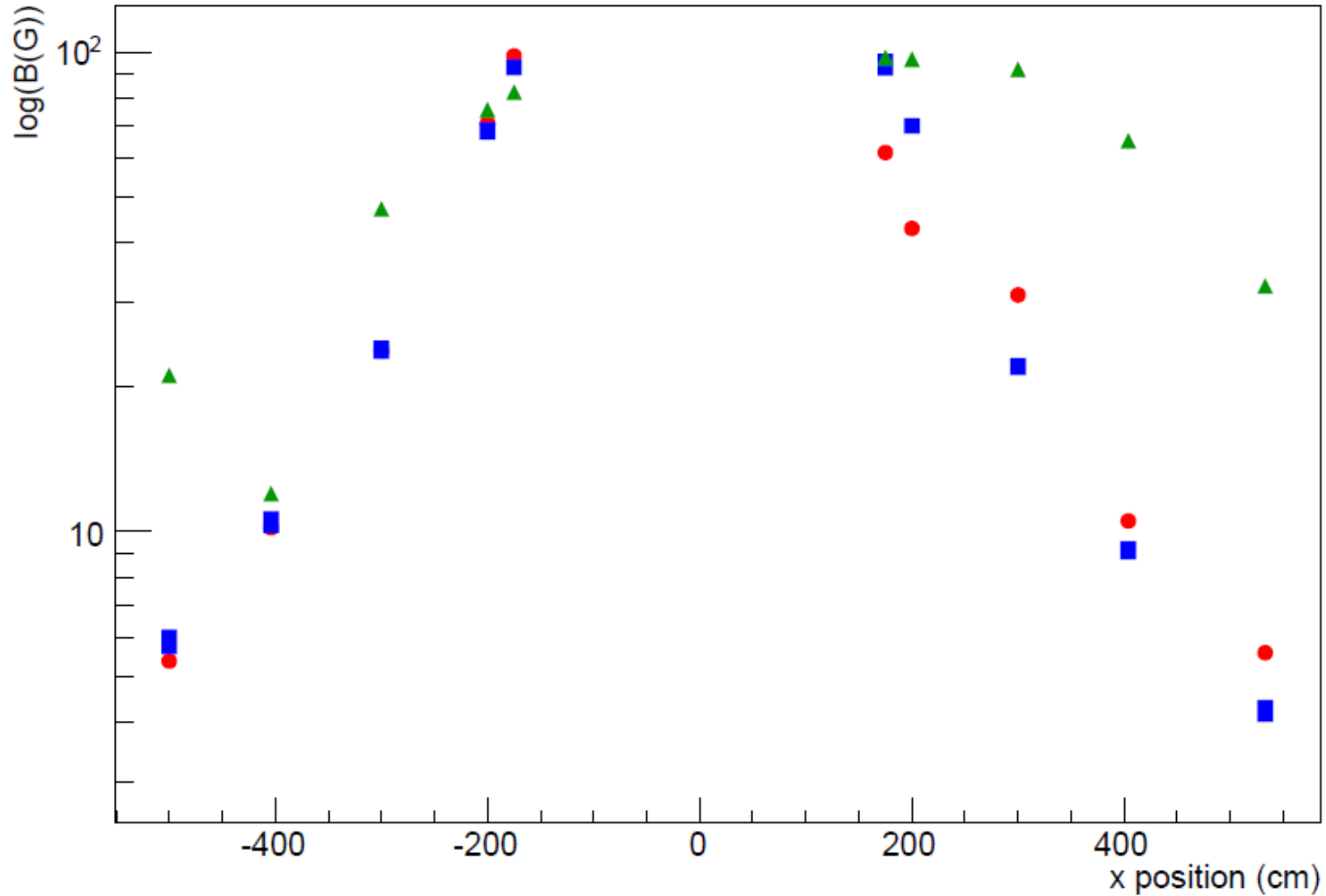
Field along x axis at +80cm from bore

Comparing model data to probe data at $y=80\text{cm}$, $z=0$



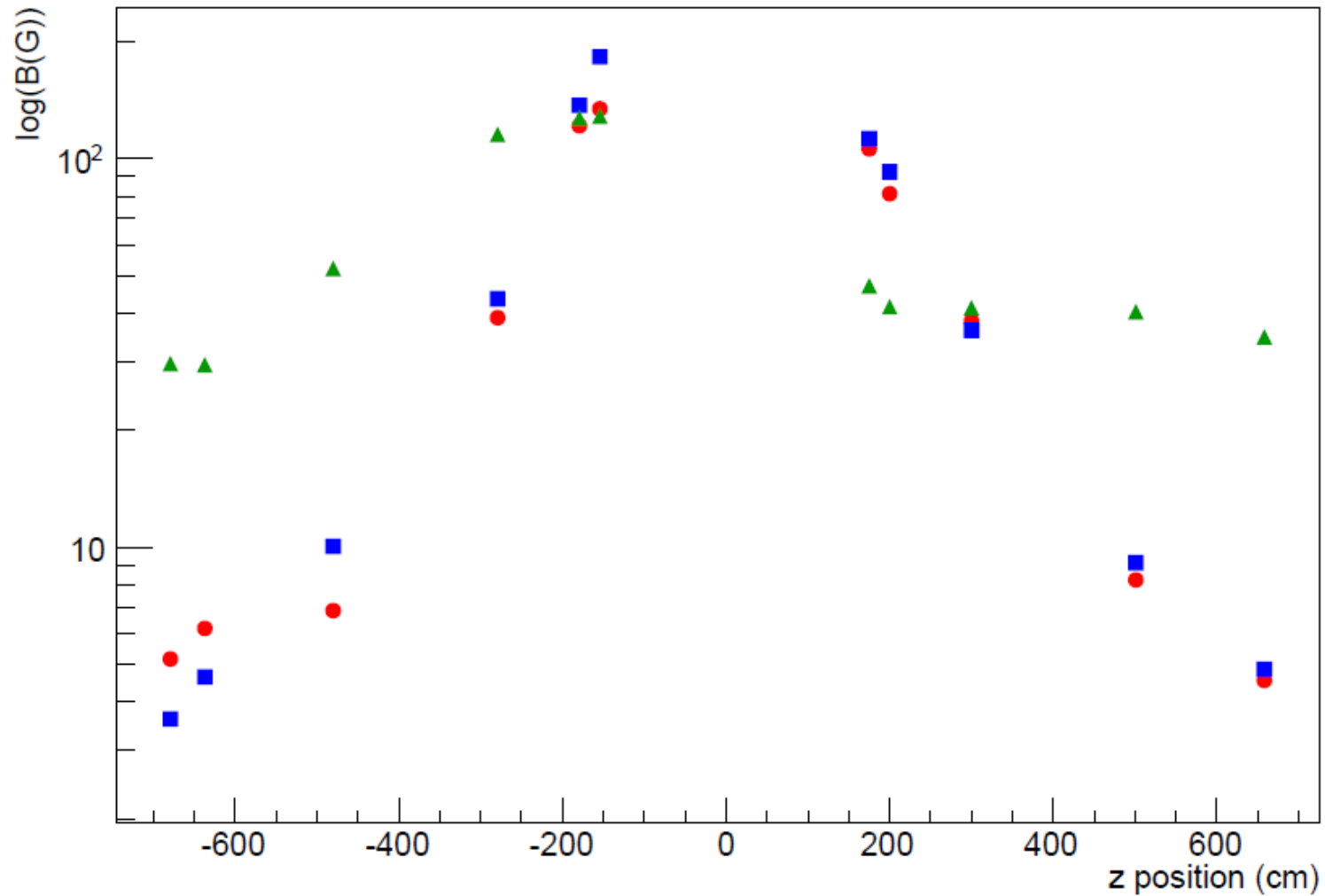
Field along x axis at -80cm from bore

Comparing model data to probe data at $y=-80\text{cm}$, $z=0$



Field along z axis at -147.4cm from bore

Comparing model data to probe data at $x=0, y=-147.4\text{cm}$



Field along x axis at -147.4cm from bore

Comparing model data to probe data at $y=-147.4\text{cm}$, $z=0$

