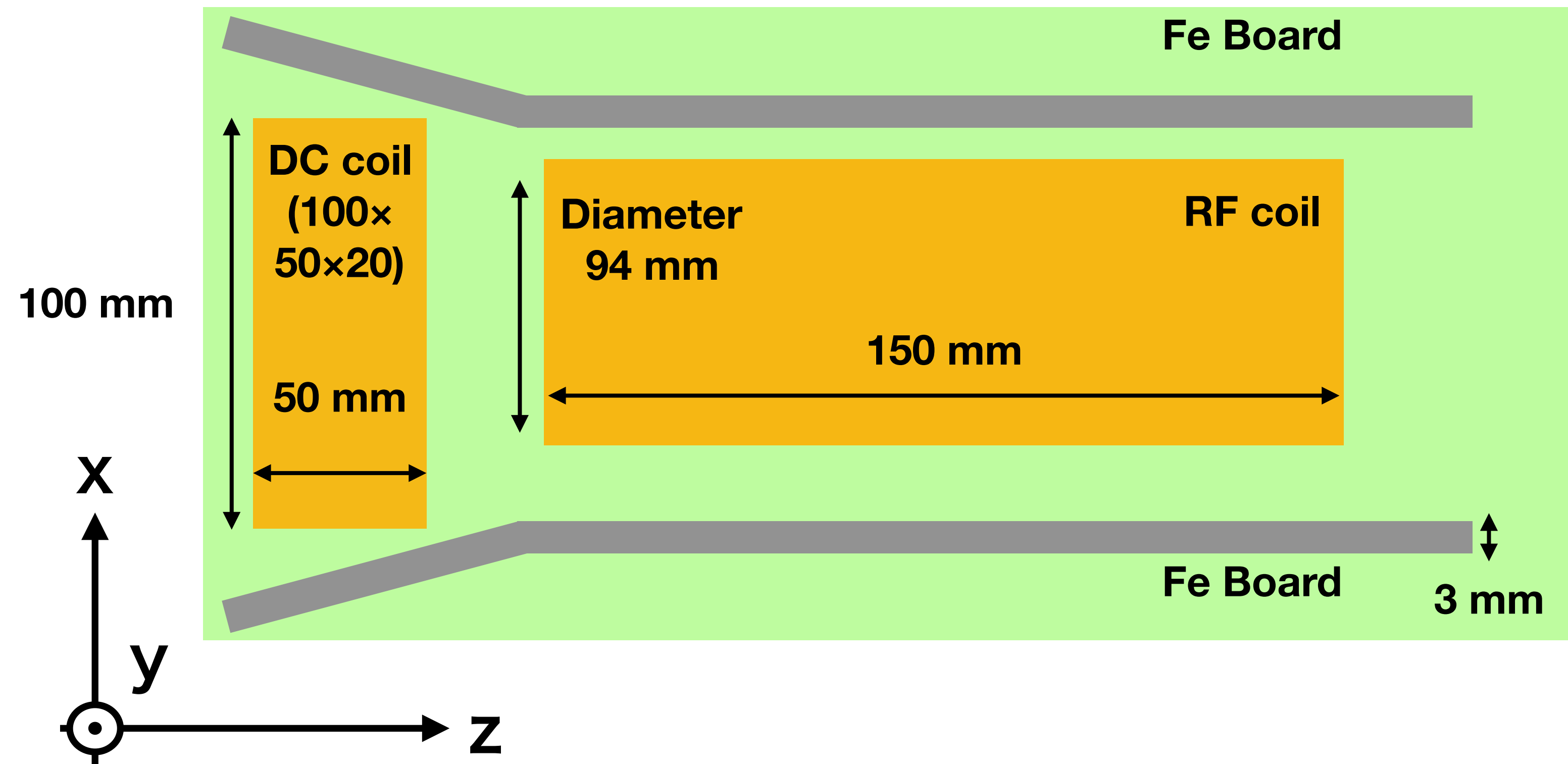
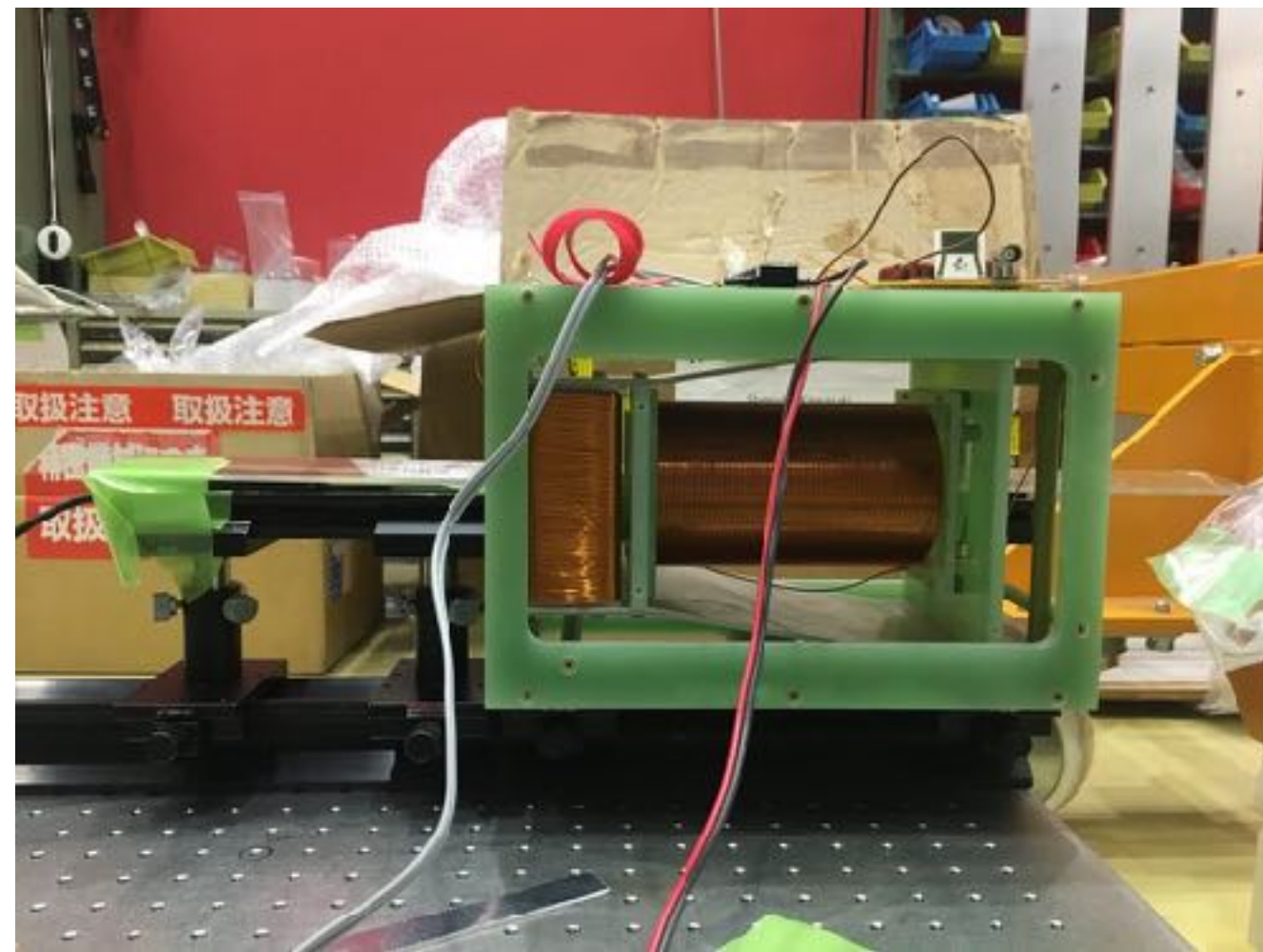


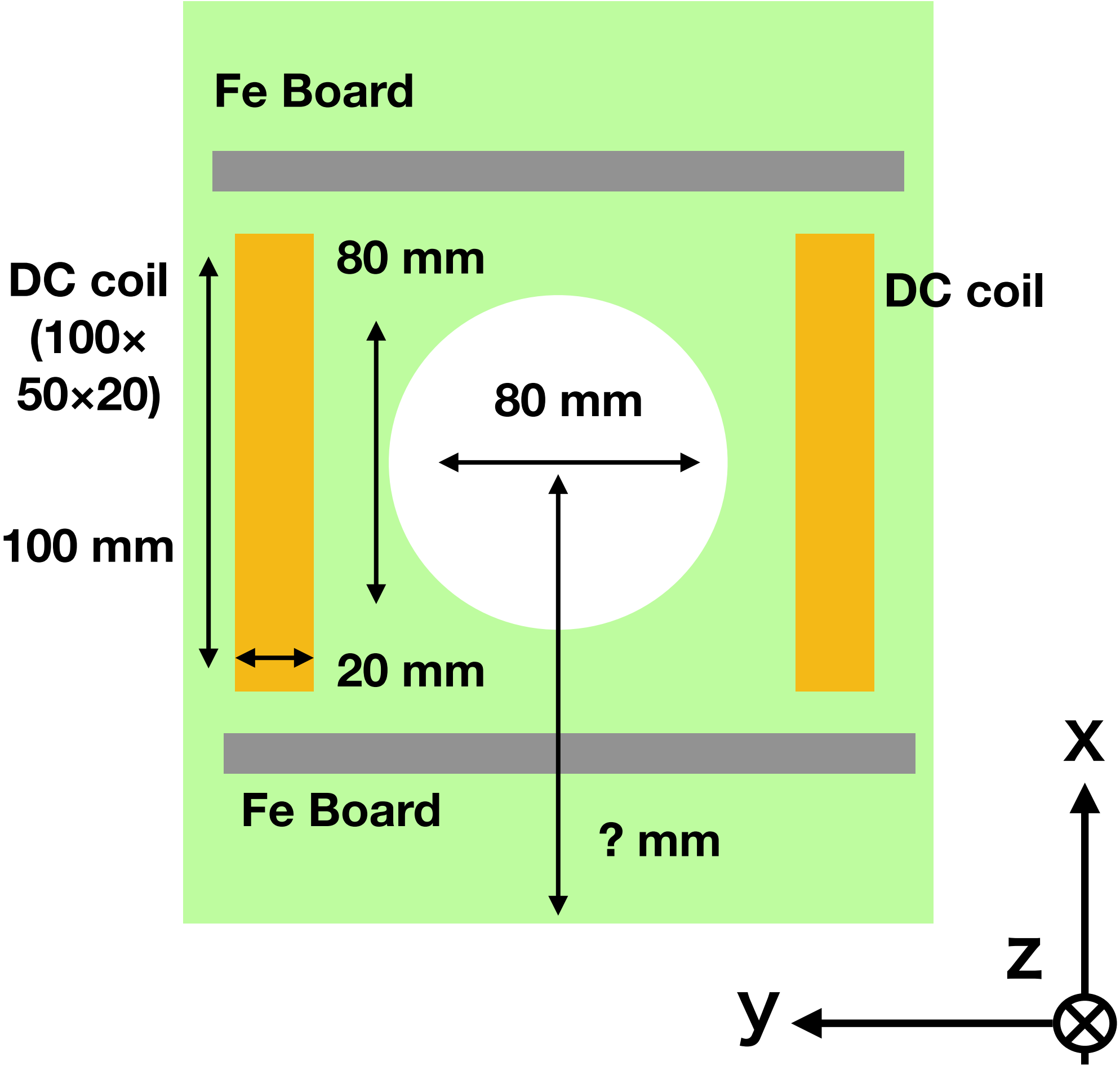
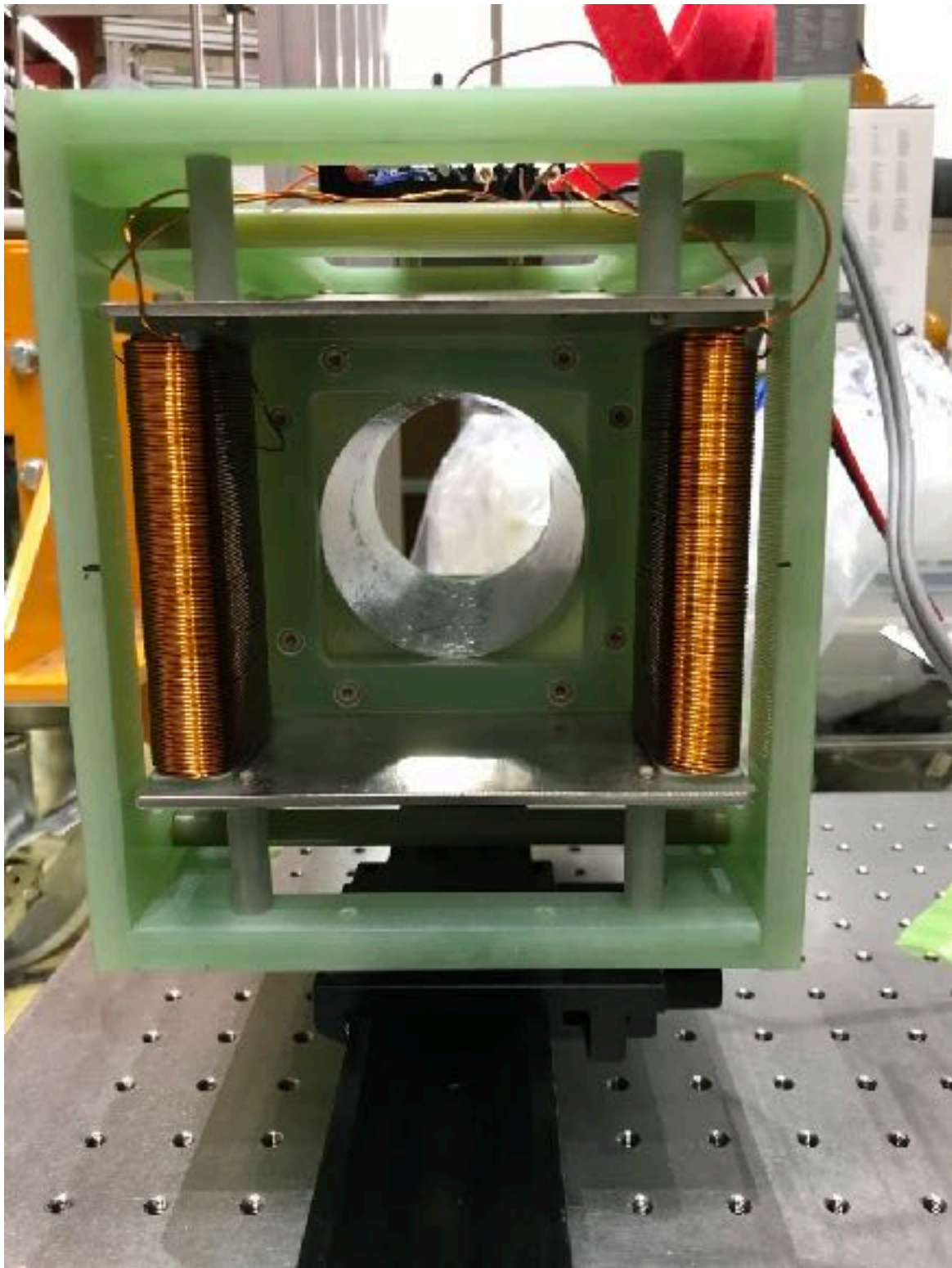
Characterization of the AFP spin-flipper

H. Akatsuka & T. Higuchi, 2021-07-09

AFP spin-flipper



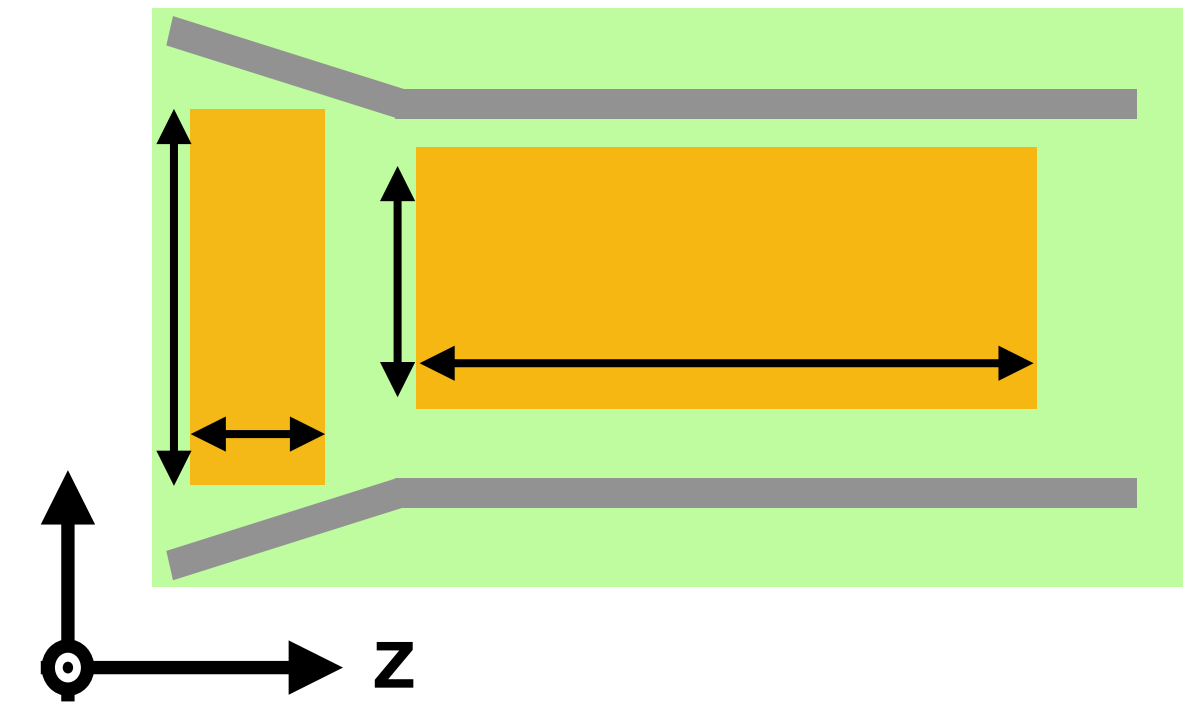
AFP spin-flipper



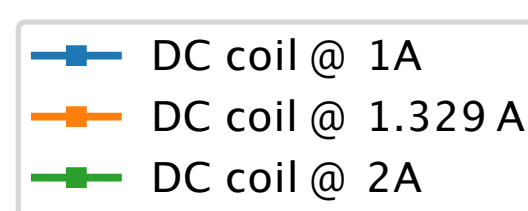
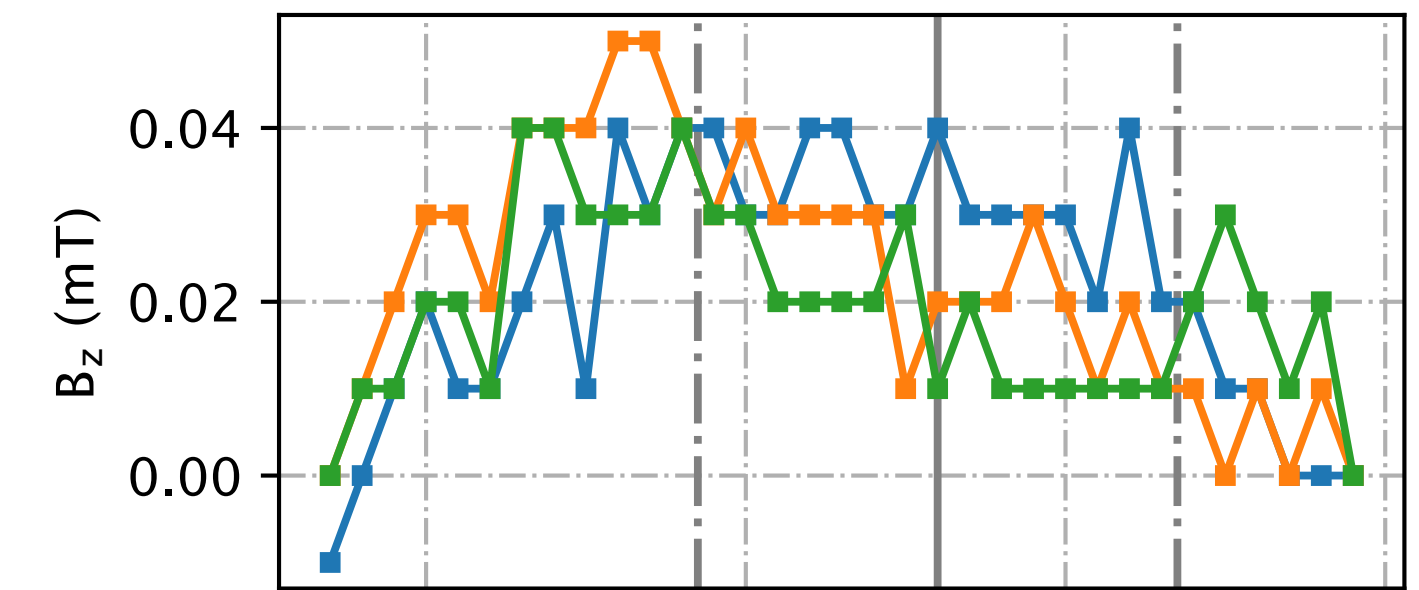
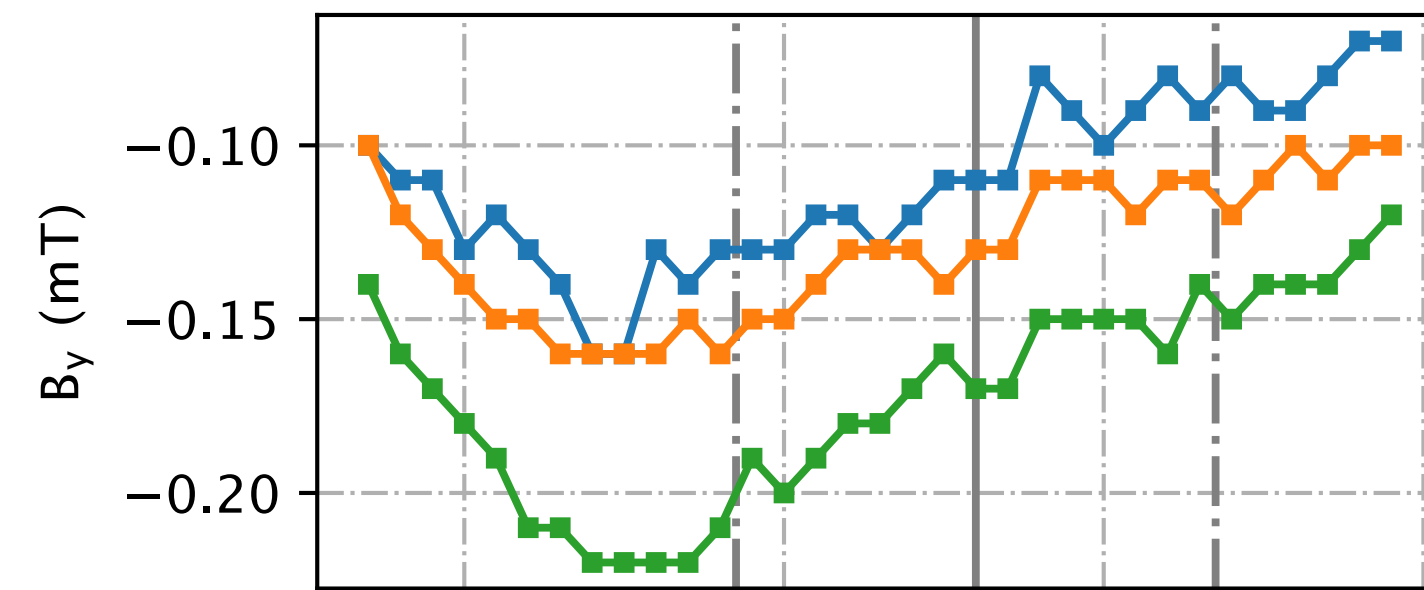
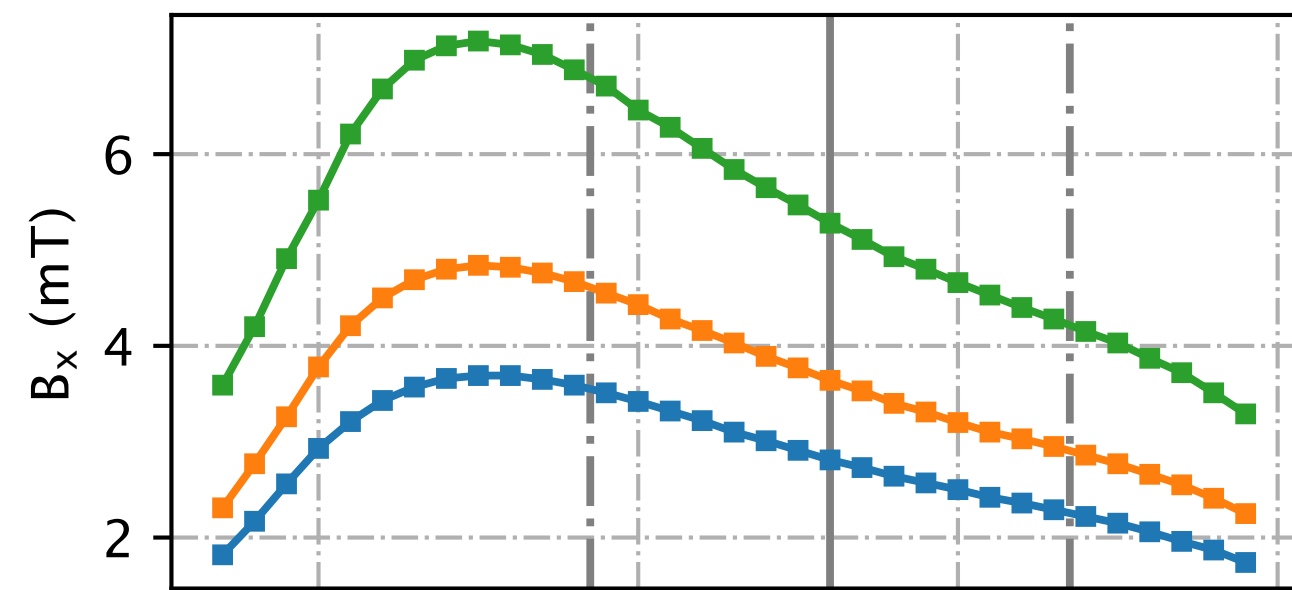
測定項目まとめ

- それぞれのコイルの磁場分布測定
- RFコイルの共鳴周波数 f_c を測定
- DCコイルの電流依存性を測定し、RFコイル中心で $B_x = f_c / \gamma_n$ となる電流値を決定

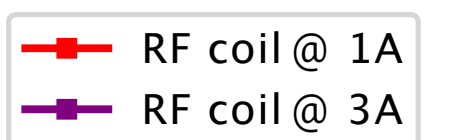
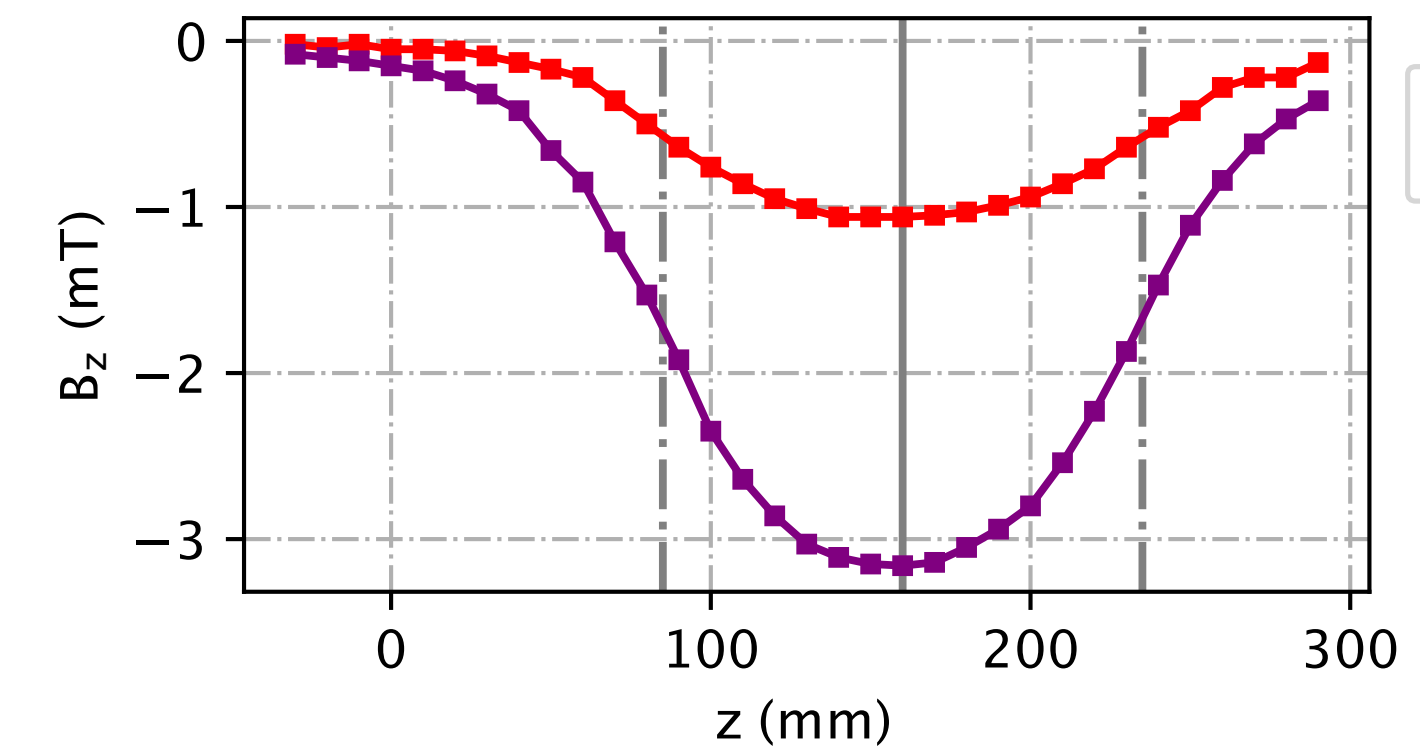
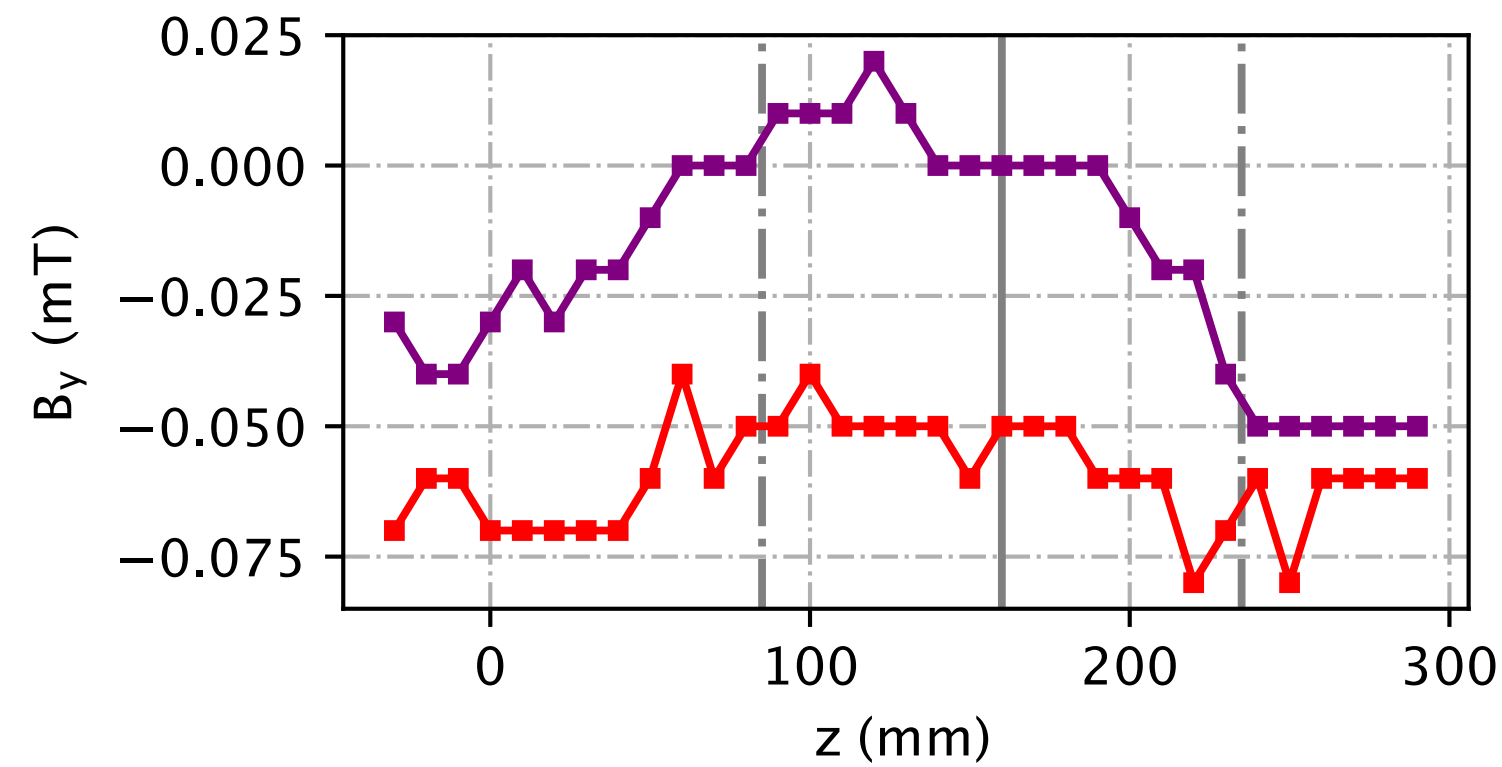
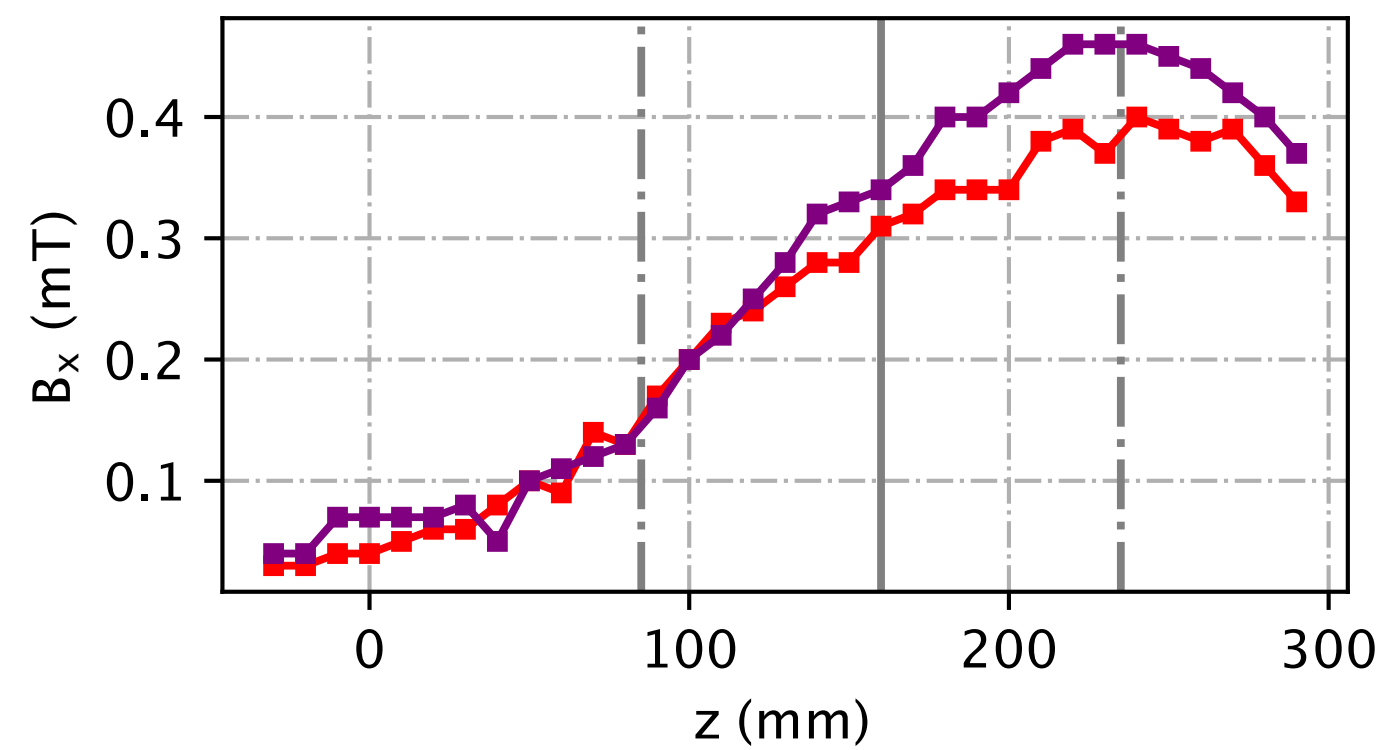
磁場分布測定



DC coil

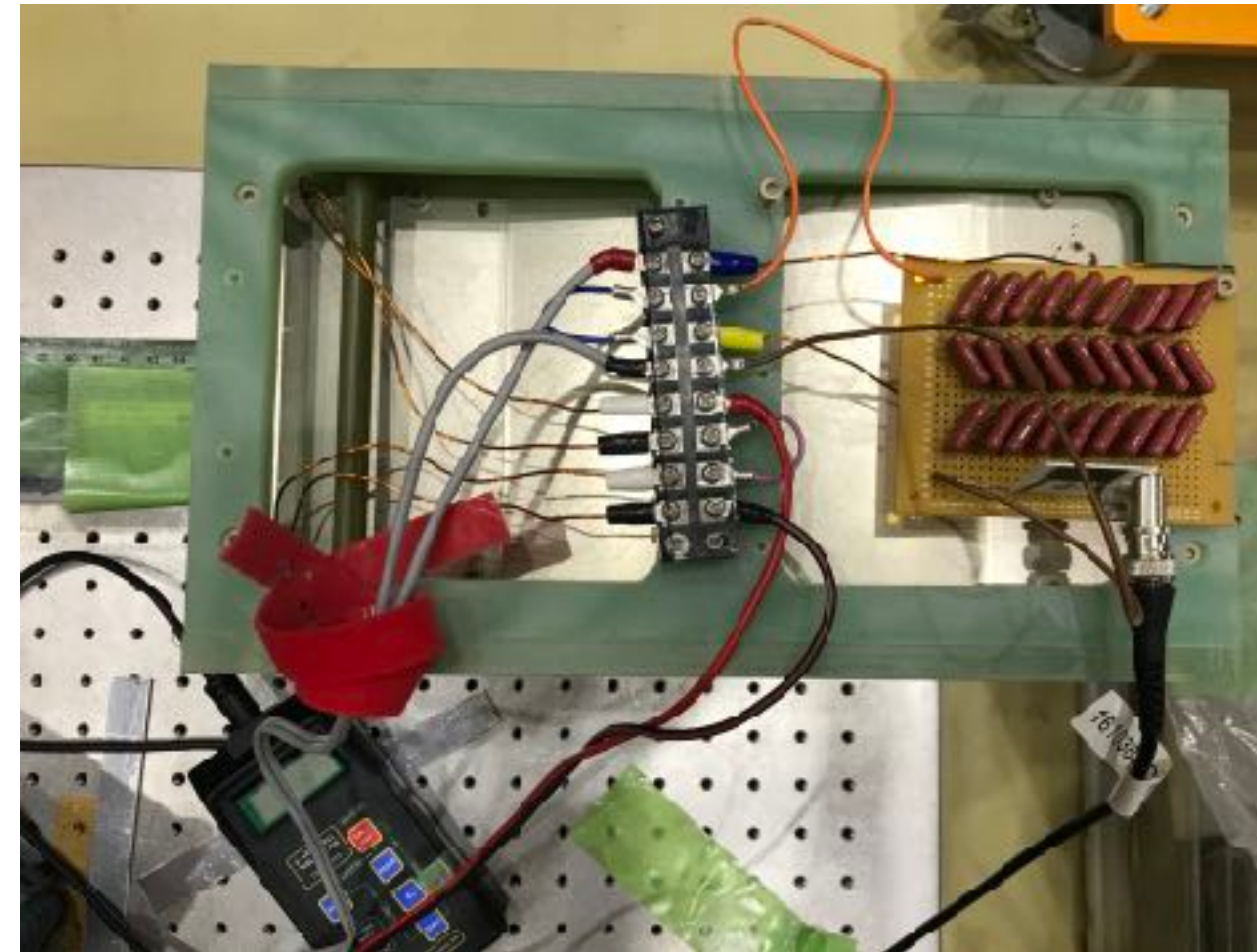
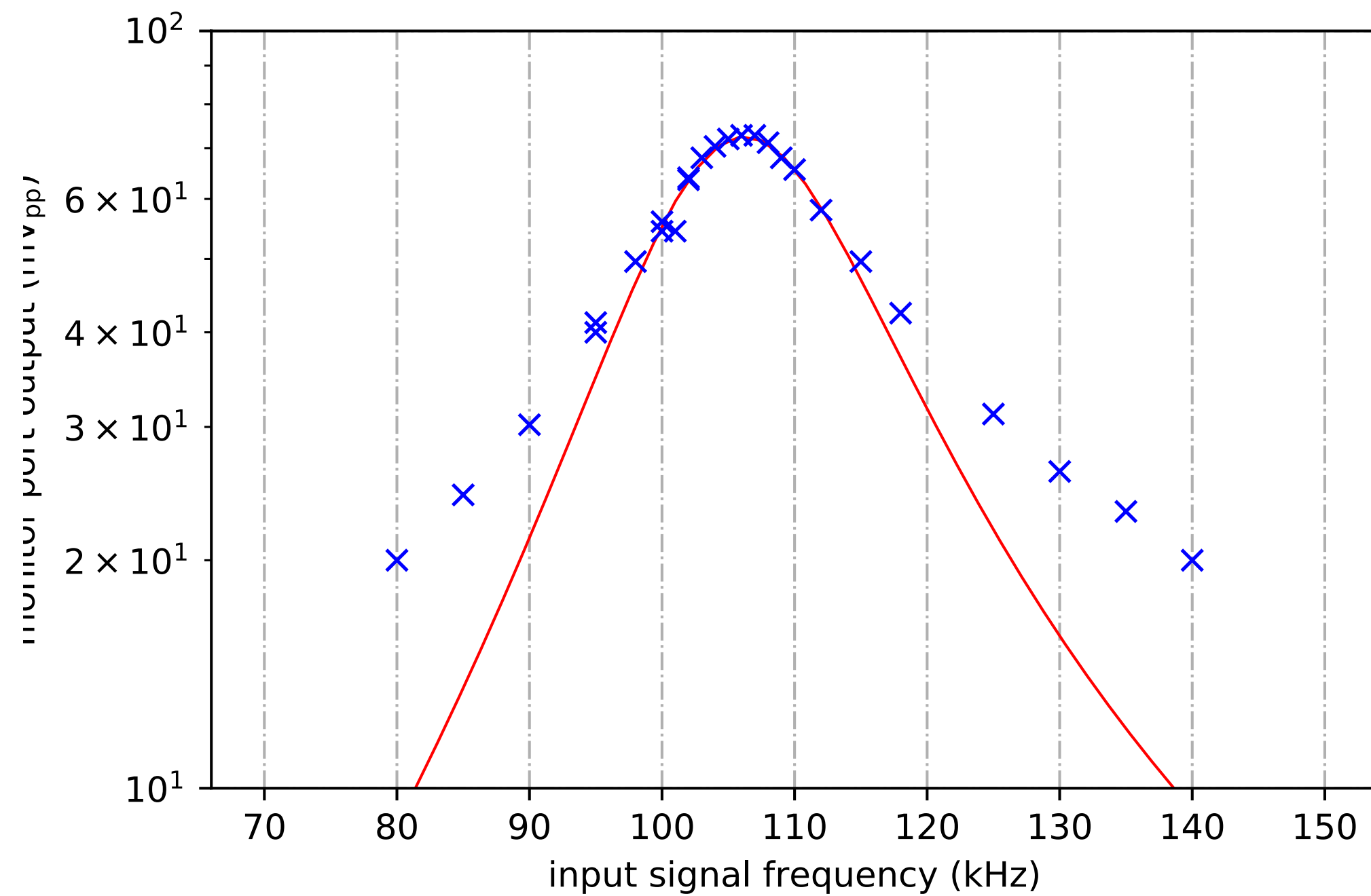


RF coil



- Z scan で磁場分布を測定

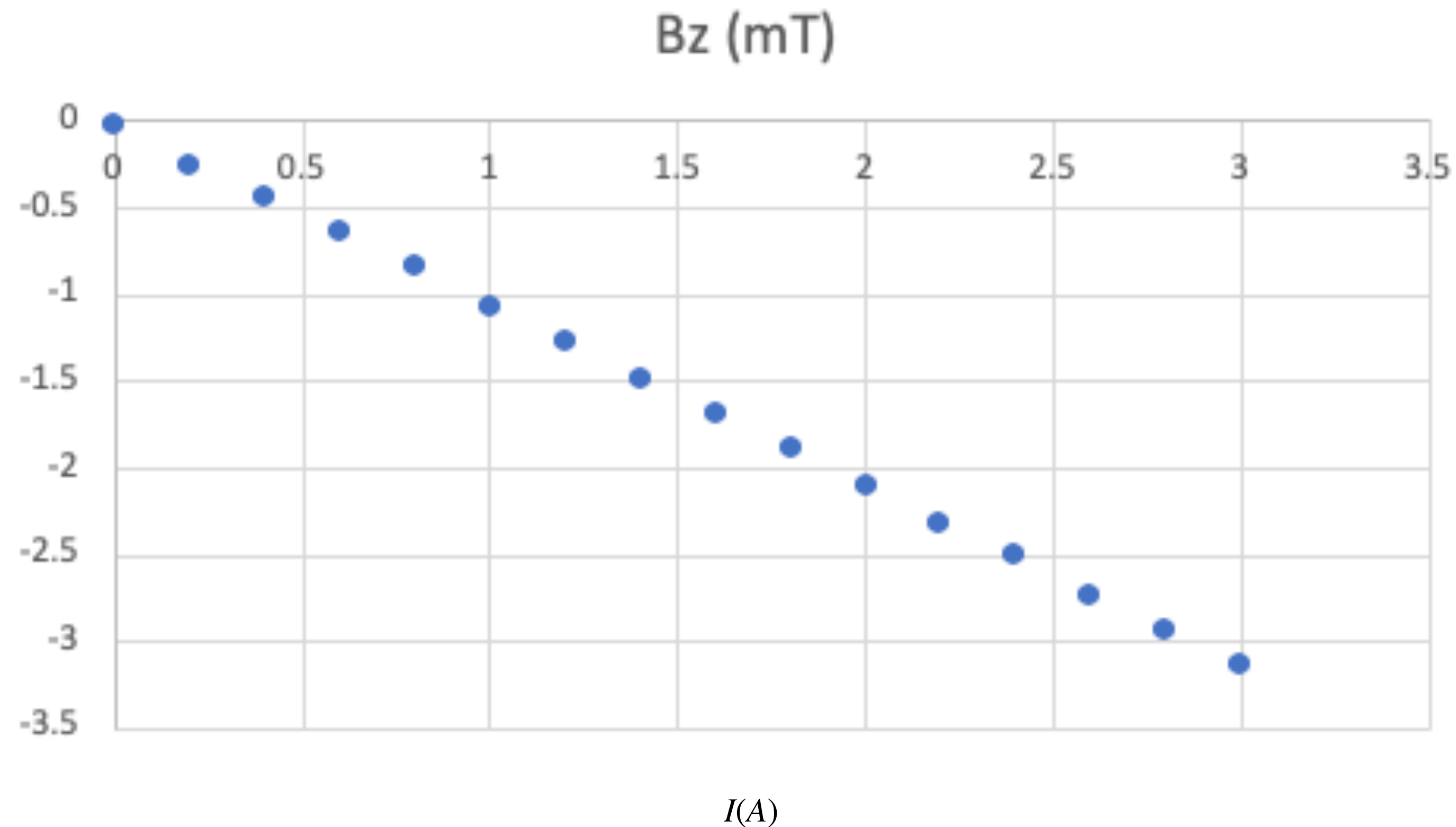
RF coil Resonance Frequency



- Function Generator をRFコイルの入力に、モニター出力をオシロスコープに
- 入力周波数を変えて、共鳴を観測 ($f=103.6$ kHz)

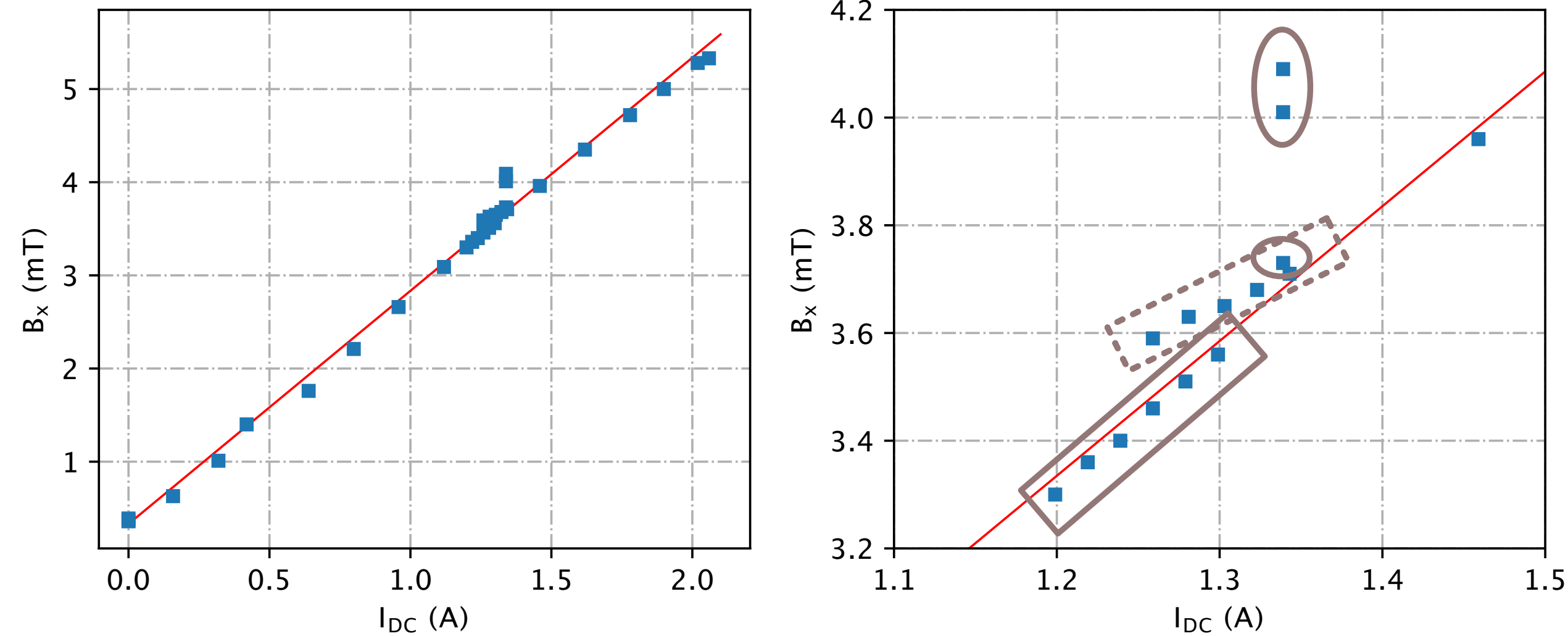
RF coil 磁場の電流依存性

(Z=160mm center of RF coil)

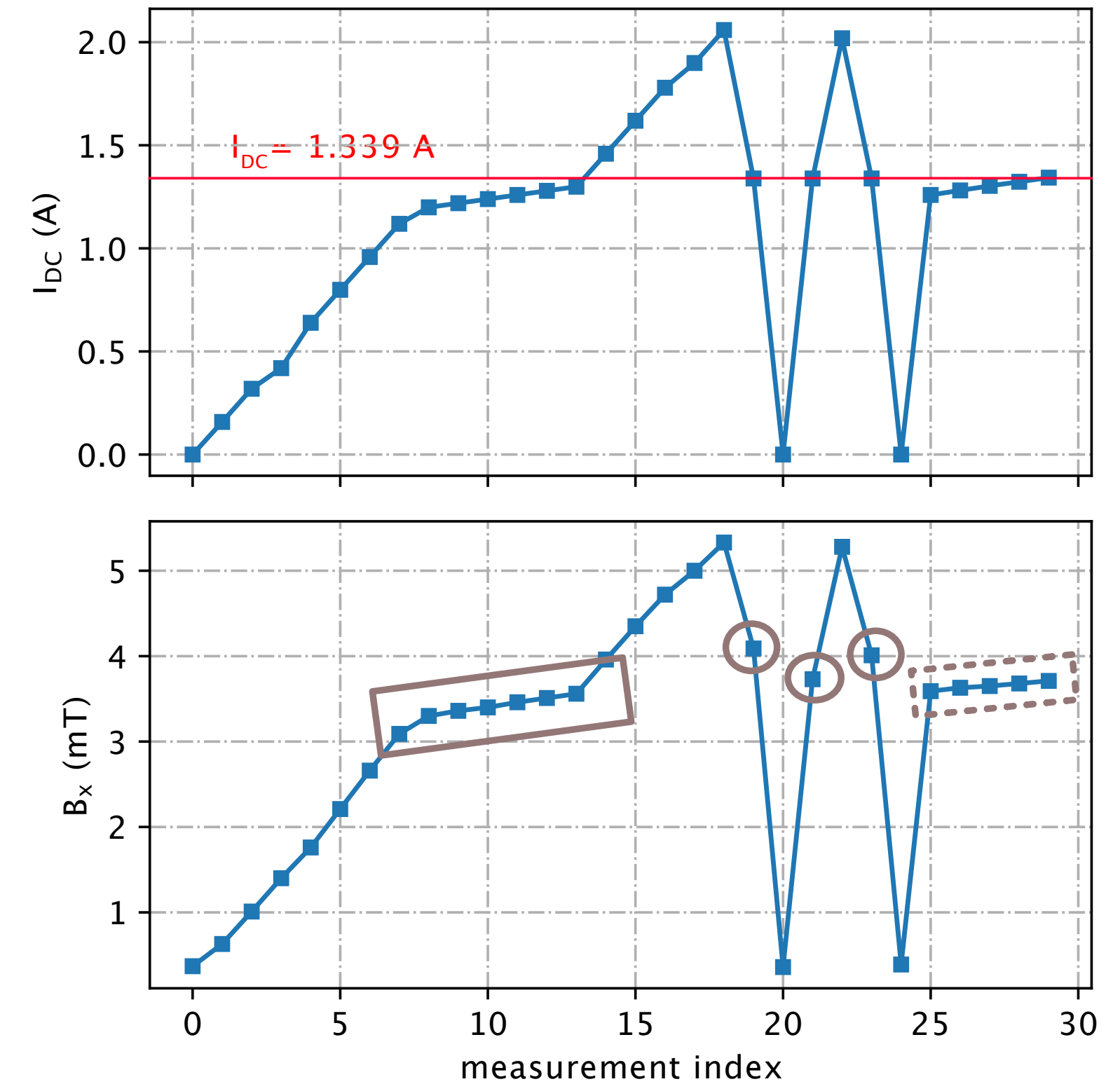


- $B_z/I_{RF} = -1 \text{ mT/A}$

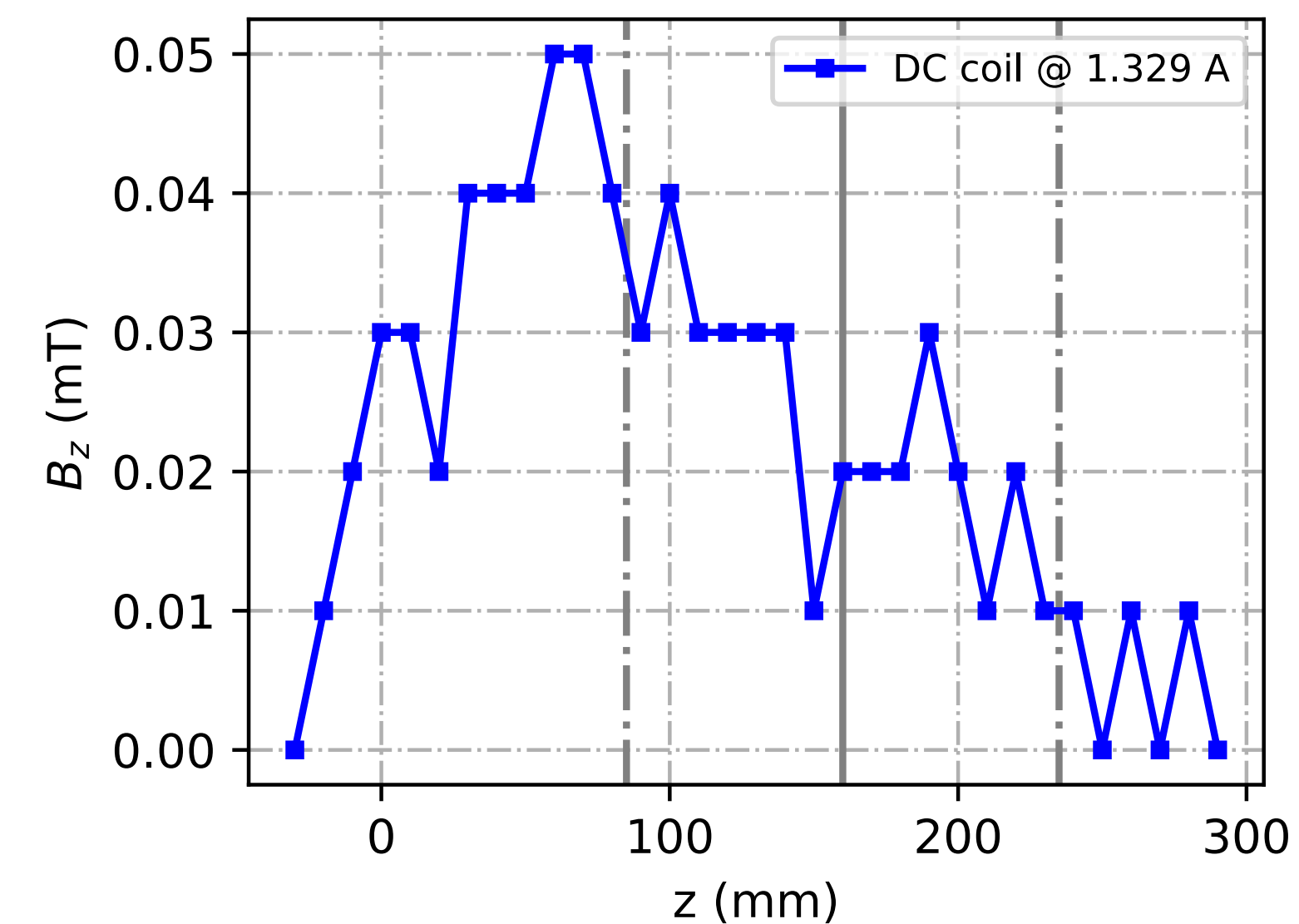
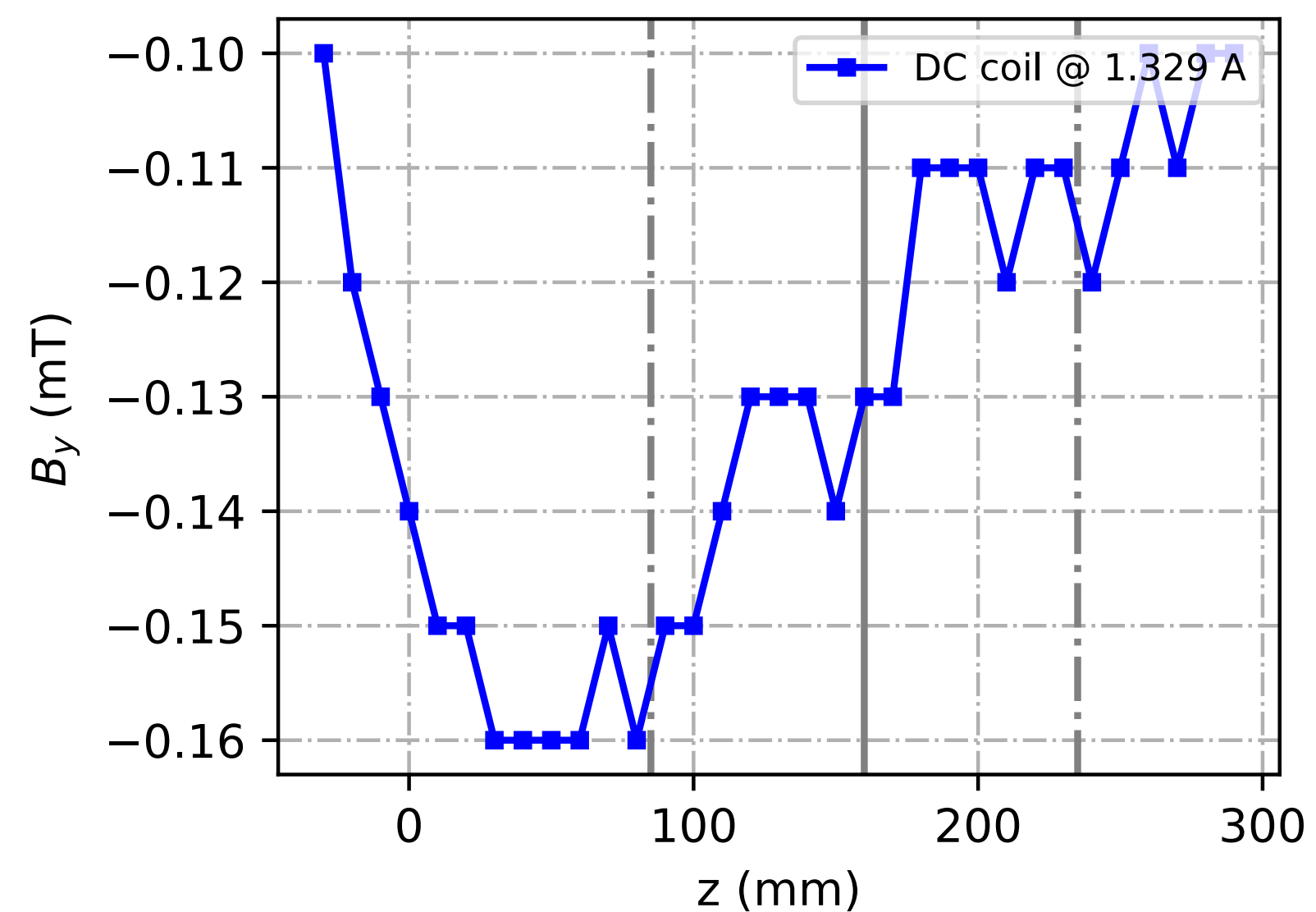
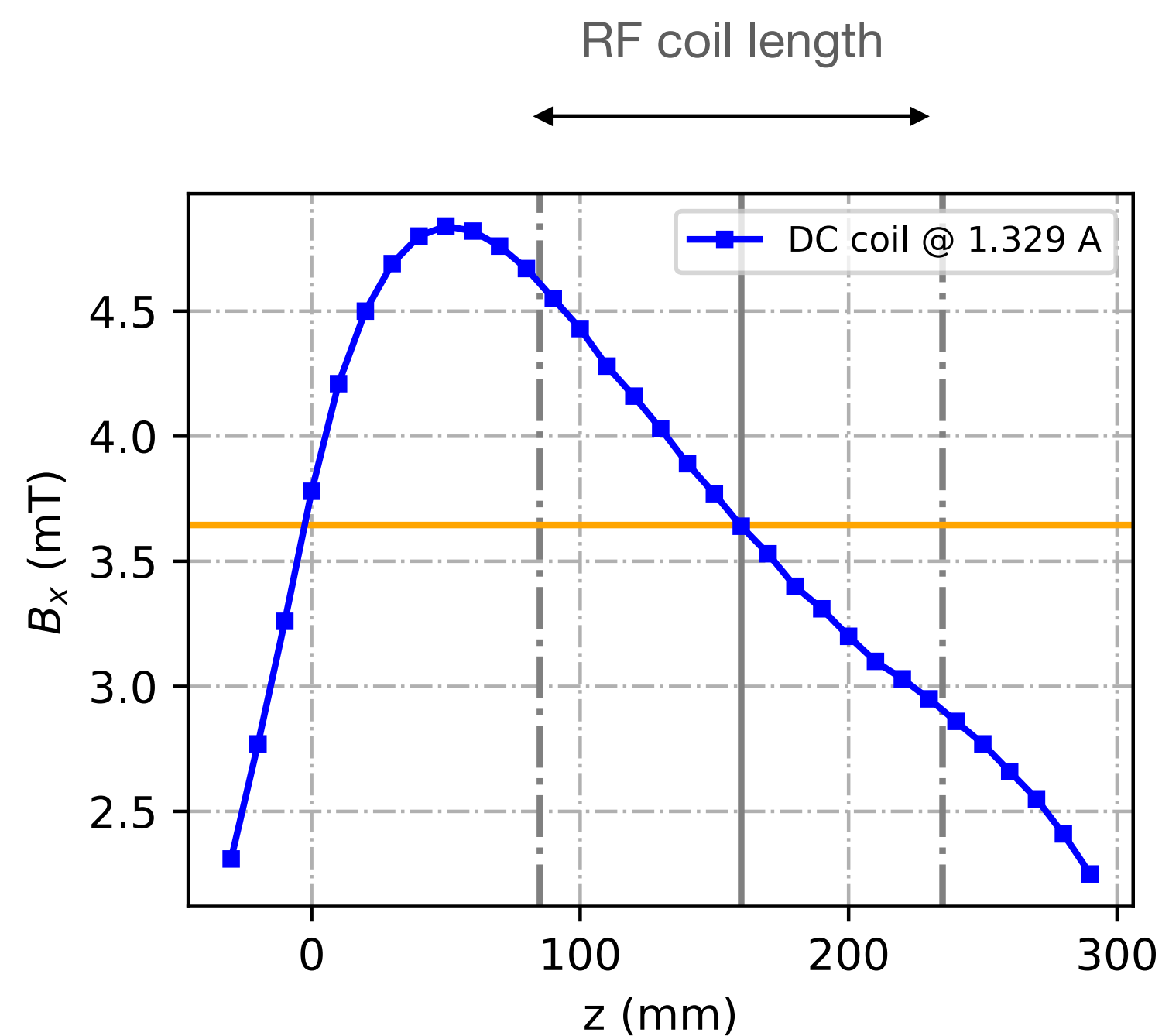
DC coil の磁場の電流依存性測定



- RFコイル中心で、 $B_x = 3.65$ mT なる I_{DC} を探す
- $I_{DC} = 1.329$ A に決定
- ヨークによるヒステリシスを観測



DC coil DC (1.329A) Z scan



- $I_{DC} = 1.329 \text{ A}$ に決定し、磁場分布を再測定