

Practically important problem:

The hysteresis loop for the in-plane magnetization reversal of the sample $\text{Pd}_{0.99}\text{Fe}_{0.01}$ (plate with size about $1\text{mm} * 1\text{mm} * 40\text{nm}$) is given in the figures.

Estimate variations in the loop-shape providing the plate-size about $0.1\text{mm} * 1\text{mm} * 40\text{nm}$ for two directions of the in-plane field – 1) along the long edge 2) across the edge. Consider two cases 1) the plate is solid, 2) the plate is constructed from the non-interacting 40nm ferromagnetic balls.

How large are corrections for the residual magnetization? For coercivity? For loop slope?

