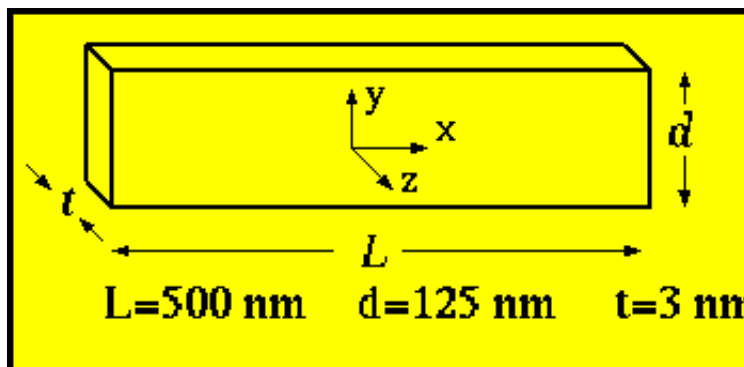




μ MAG Standard Problem



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Problem brainstormed by Bob McMichael, Roger Koch and
McMichael.

Please send comments to rmcmichael@nist.gov and join the

Sets of [solutions](#) are available.

Specifications

Standard problem #4 is focused on dynamic aspects of magnetization, such as equilibrium [s-state](#) such as is obtained after applying and then returning the field to zero. Fields of magnitude sufficient to reverse the magnetization. The time evolution of the magnetization as the system moves from equilibrium to the new equilibrium problem will be run for two different applied fields.

Geometry:

A film of thickness, $t=3$ nm, length, $L=500$ nm and width,

Material parameters:

Similar to Permalloy:

$$A = 1.3 \times 10^{-11} \text{ J/m (} 1.3 \times 10^{-6} \text{ erg/cm)}$$

$$M_s = 8.0 \times 10^5 \text{ A/m (800 emu/cc)}$$

$$K = 0.0$$

The dynamics, calculated either using the Landau-Lifshitz equation