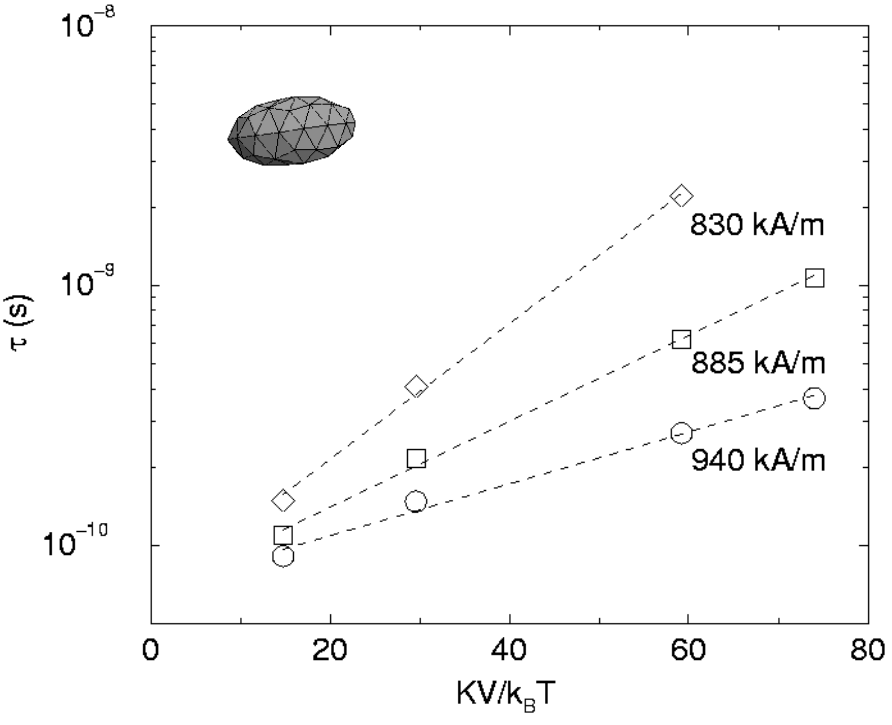


Fig. 1. Relaxation time as a function of *KV*/*kT* for different applied fields. The inset gives the finite element model.

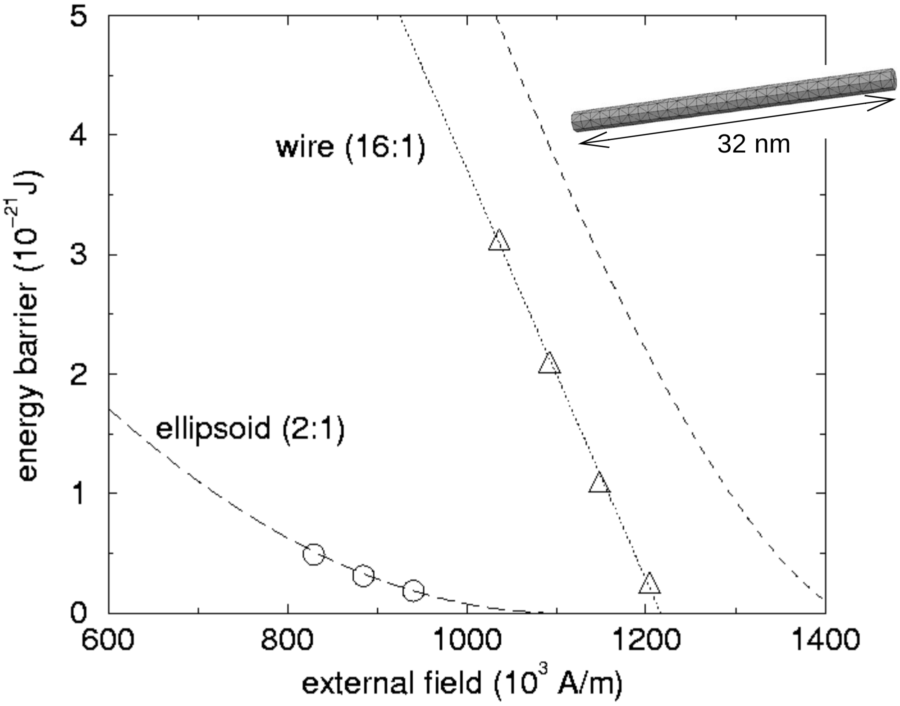


Fig. 2. Activation energy as a function of the applied field. The open symbols give the numerical values. The dashed lines give the analytical results according to equation (10) and (13). The dotted line is linear fit of the numerical values for the nanowire.

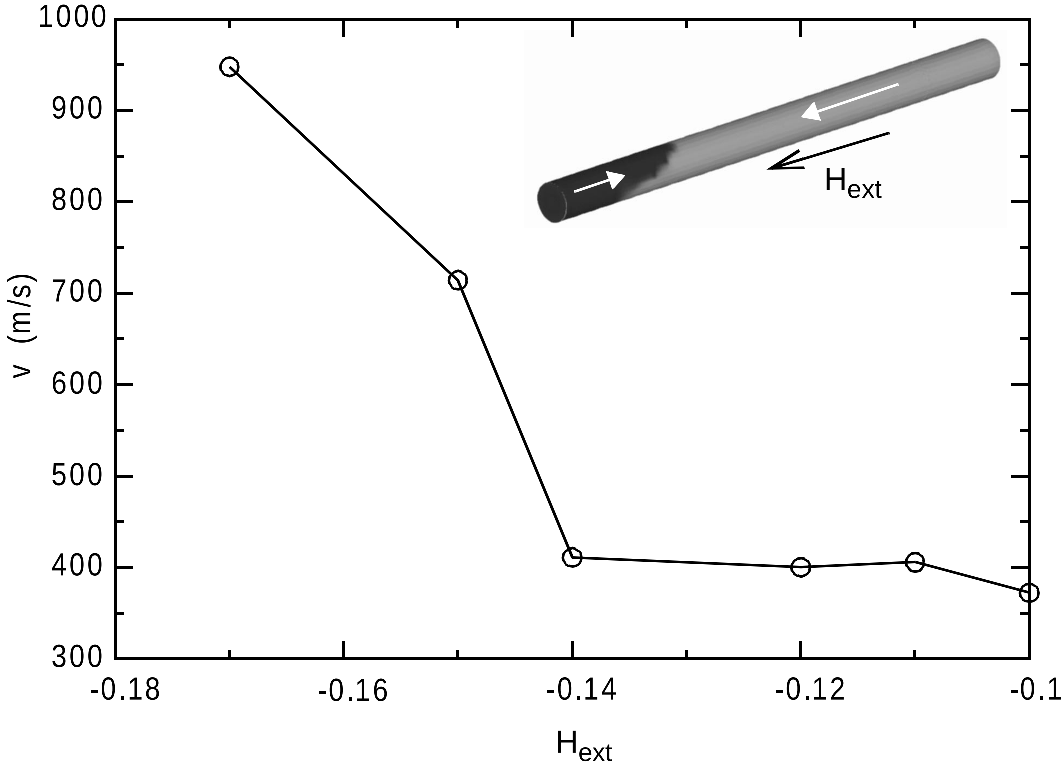
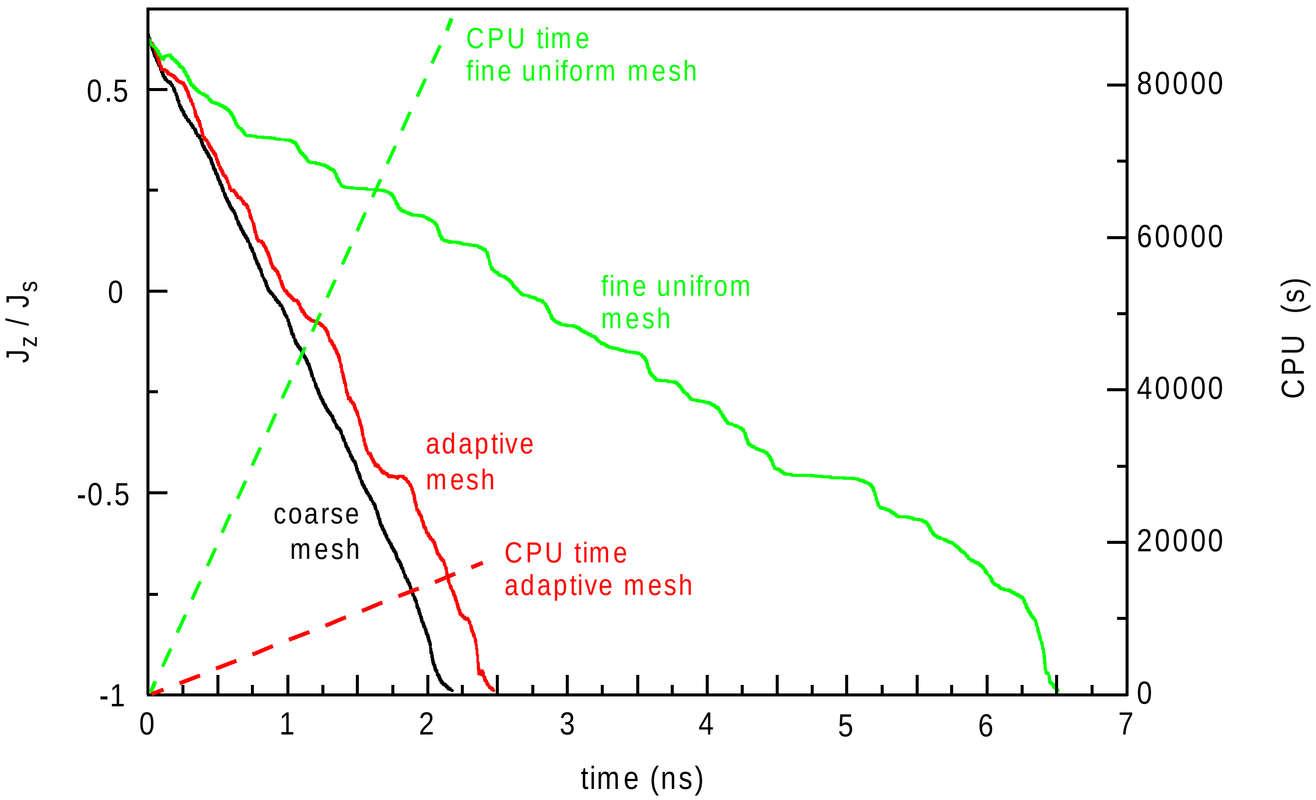


Fig. 3. Domain wall velocity calculated for a Co-nanowire with a diameter of 40 nm and a Gilbert damping constant $\alpha = 0.1$. The inset maps the magnetization component parallel to the field at the surface of the wire.



Fi.g 4. Adaptive meshing and CPU time. The solid lines give the magnetization parallel to the long axis as a function of time for a coarse uniform grid, a fine uniform grid, and an adaptive grid. The dashed curves compare the CPU time (Athlon 900 Mhz) required on the uniform grid and on the adaptive grid.

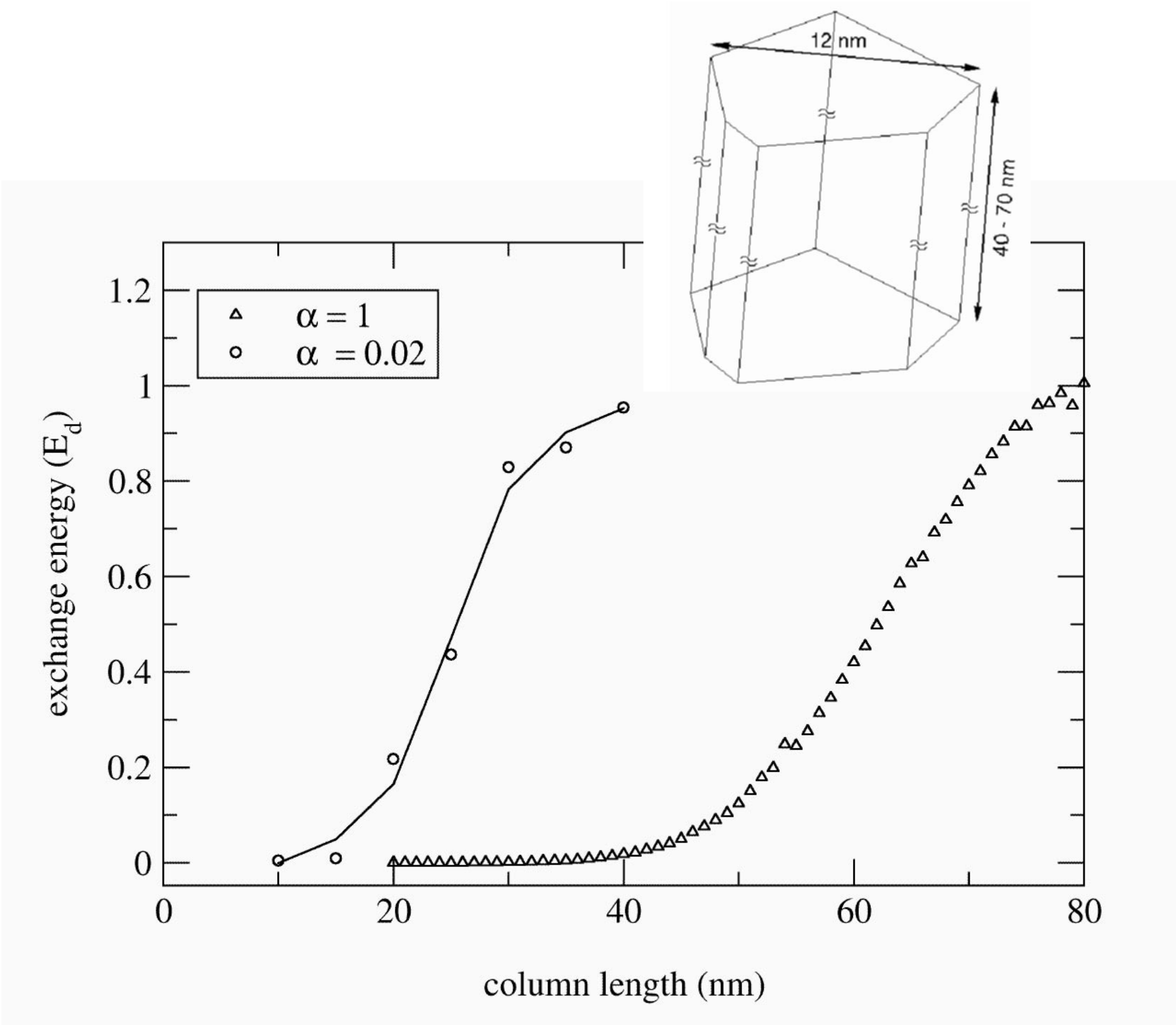


Fig. 5. Maximum exchange energy during reversal as a function of the column length. The inset gives the shape of the irregular grain.

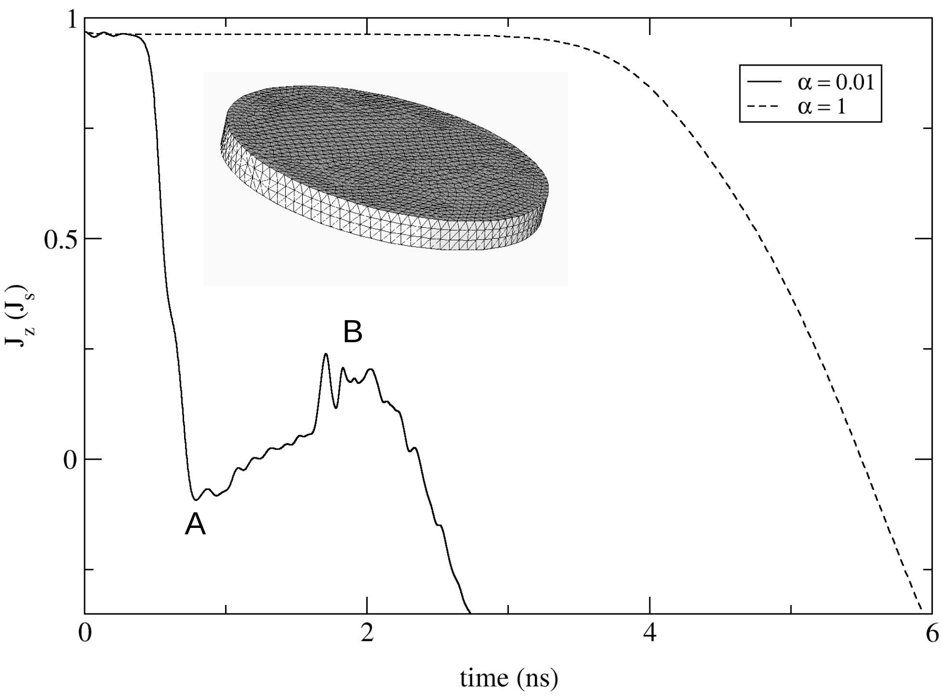


Fig. 6. Time evolution of the magnetization component parallel to the applied field during the reversal of a nanodot with a thickness of 15 nm and a diameter of 165 nm for small and large damping. The inset shows the finite element model.

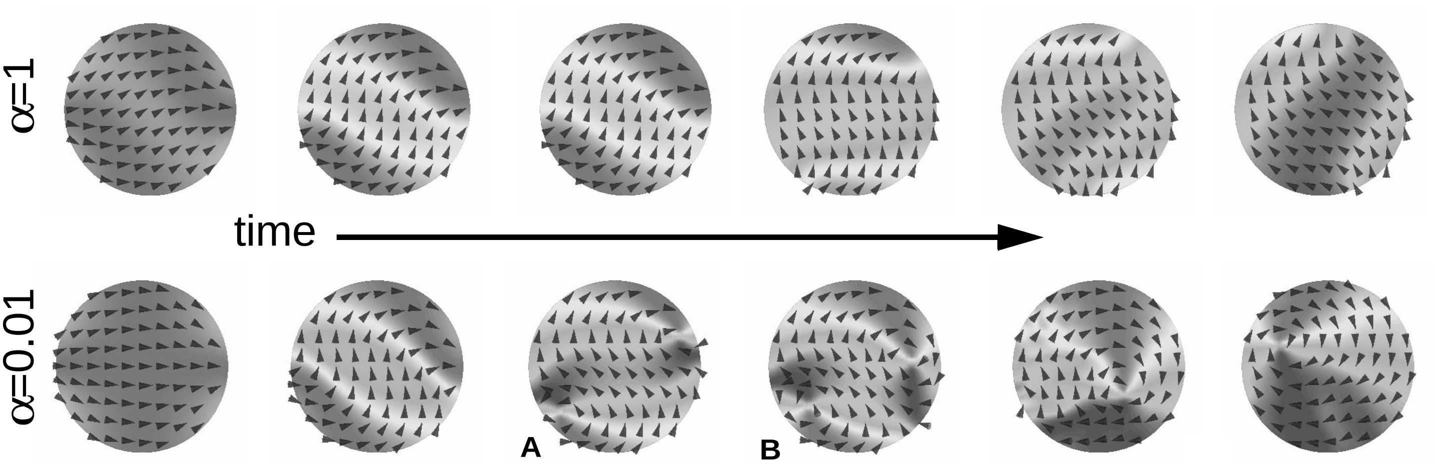


Fig. 7. Vortex formation and vortex movement during the reversal of a nano-dot with a thickness of 15 nm and a diameter of 165 nm for small and large damping.