

These animations and videos introduce the original continuous wave NMR

This animation shows

- (1) A compass needle in a static applied magnetic field B_0
- (2) The oscillation frequency depends linearly on the applied magnetic field
- (3) The needle can be moved by an oscillating magnetic field B_1
- (4) Applying the frequency of B_1 at resonance drives the needle like a child in a swing

You can play with this applet here: <http://www.drcmr.dk/MR>

<http://www.youtube.com/watch?v=1OrPCNVSA4o>

This animation shows

- (1) The spins precess at the Larmor frequency,
- (2) The Larmor frequency depends linearly on the applied magnetic field
- (3) The spin up and spin down populations are nearly equal

<http://mutuslab.cs.uwindsor.ca/schurko/nmrcourse/animations/precess/precess.htm>

In this video, Sir Paul uses a bicycle wheel to illustrate the classical analog of NMR

- (1) The precession frequency is independent of the tilt angle
- (2) The resonance is produced by applying a torque at the precession frequency
- (3) The torque is applied perpendicular to the torque due to gravity
- (3) There is relaxation due to energy loss

<http://www.magritek.com/support-videos#01>

or <http://www.youtube.com/watch?v=7aRKAXD4dAg>

In this video, Sir Paul describes proton NMR

- (1) The energies of the up and down spins
- (2) The thermal equilibrium between the up and down spin populations
- (3) The very small spin excess depends on temperature and applied field
- (4) The Larmor frequency is proportional to the applied field and to the gamma of the nucleus
- (5) The torque is applied with an oscillating magnetic field B_1 that is perpendicular to B_0

<http://www.magritek.com/support-videos#02>

or <http://www.youtube.com/watch?v=jUKdVBpCLHM>