

The Larmor Frequency
The Bloch Equations
Measuring T_1 : Inversion Recovery
Measuring T_2 : the Spin Echo

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NMR spectroscopy

- The Nuclear Magnetic Resonance Phenomenon
- The Magnetization Vector
- Spin Relaxation
- The Chemical Shift
- Scalar Coupling
- Linewidths and Rate Processes
- The Nuclear Overhauser Effect

Spin angular momentum in NMR

- Nuclei may possess a spin angular momentum of magnitude $\sqrt{I(I + 1)} \hbar$
- The component around an arbitrary axis is $m_I \hbar$ where $m_I = I, I-1, \dots, -I$.
- The nucleus behaves like a magnet in that it tends to align in a magnetic field.
- The nuclear magnetic moment μ has a component along the z-axis $\mu_I = \gamma m_I \hbar$.