

Internal Seminar

Magnetic field sensing using atoms

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Michael Faraday discovered that when linearly polarized light passes through certain crystals placed in a magnetic field, the light's polarization rotates. The effect is enhanced when a laser passes through a gas of atoms placed in a magnetic field and the laser is resonant with the atomic transition frequency. This phenomenon can be utilised to determine the magnetic field surrounding the medium and enables sub-pico-Tesla sensitivities in detecting magnetic fields. This talk focuses on the measurement of static and low-frequency magnetic fields by modulating the laser intensity. The noise in such a measurement is studied to understand the limiting sensitivity of detecting magnetic fields in such an experiment.

Wednesday, Jun 19th 2024

14:30 Hrs

Seminar Hall, TIFR-H