VII. MAGNET LABORATORY RESEARCH

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This group is devoted to the study of the distribution of currents and of charge within the nucleus. Nuclear magnetic dipole moments are observed by nuclear resonance techniques in diamagnetic atoms or molecules.

A supplementary technique, involving the production of nuclear orientation in an atomic vapor by the absorption of circularly polarized light, first suggested by Kastler, is being developed because only 10^{12} or 10^{13} atoms are needed, and this makes possible studies of radioactive nuclei which can only be produced in these small quantities.

Hyperfine structure and isotope shift are studied by a magneto-optic scanning method and by radiofrequency resonance absorption, optically detected.

Investigations have been reported on sodium and mercury. Further observations, with greatly improved apparatus, are in progress.

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