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Giant Ferromagnetic Hall Coefficient in $\text{La}_{0.5}\text{Ca}_{0.5}\text{CoO}_3$
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electronic Technology, Jet Propulsion Laboratory, California Institute
of Technology, Pasadena, CA 91109 — We report the **Hall** effect study
in thin film $\text{La}_{0.5}\text{Ca}_{0.5}\text{CoO}_3$ material, Our results provide convincing
evidence for the anomalous Hall effect, which suggests that near the
ferromagnetic ordering temperature, the dominant electron scattering
mechanism is the spin fluctuations. The value of the anomalous Hall co-
efficient R_s in $\text{La}_{0.5}\text{Ca}_{0.5}\text{CoO}_3$ significantly exceeds those of other known
single-phase ferromagnetic metals, We suggest that the coexistence of
high- and low-spin configurations in the perovskite cobaltites, which
gives rise to the magnetic percolation behavior in $\text{La}_{1-x}\text{Ca}_x\text{CoO}_3$, may
be responsible for the giant R_s .