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A Cantilever Torque Magnetometer for Measuring Hall Conductivity SAMUEL MUMFORD, E. M. LEVENSON-FALK, Stanford University, AMIR YACOBY, Harvard University, AHARON KAPITULNIK, Stanford University — We propose a cantilever-based torque magnetometer of Corbino-disc patterned samples in magnetic field. Applying a voltage difference across the disc, a magnetic dipole moment is created which will interact with the magnetic field, exerting a torque on the cantilever. A circulating current will flow in the presence of potential difference between the two edges of the disc which is placed at the end of a vibrating cantilever. The induced magnetic dipole moment will interact with the magnetic field, creating a torque. The measured torque yields information about the transverse conductance of the ring - hence σ_{xy} .

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