

Abstract Submitted
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Simple Single-Shot Field Reconstruction on the 10 micro-Gauss Level¹ ARTURO PAZMINO, LUDWIG KRINNER, MICHAEL STEWART, DOMINIK SCHNEBLE, Dept. of Physics and Astronomy, Stony Brook University — Accurate knowledge of the magnetic field is imperative in many physical systems for the determination of their energies and timescales. In ultracold atomic clouds, precise control of magnetic-field induced Zeeman splittings of hyperfine transitions can be challenging due to spatially constricted geometries subject to slowly drifting, spatially inhomogeneous fields. Here we present a technical note on the precise reconstruction of magnetic fields, on the $\sim 10\mu\text{G}$ level, at the position of a trapped atomic cloud, using only atomic population to determine the magnetic field in a single-shot measurement.

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