

Abstract Submitted  
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**Pauli paramagnetism of an ideal Fermi gas**<sup>1</sup> TIMUR M. RVACHOV, YERYOUNG LEE, TOUT T. WANG, JAE-HOON CHOI, WOLFGANG KETTERLE, MYOUNG-SUN HEO, MIT-Harvard Center for Ultracold Atoms — We show how to use trapped ultracold atoms to measure the magnetic susceptibility of a two-component Fermi gas. The method is illustrated for a non-interacting gas of <sup>6</sup>Li, using the tunability of interactions around a wide Feshbach resonances. The susceptibility versus effective magnetic field is directly obtained from the inhomogeneous density profile of the trapped atomic cloud. The wings of the cloud realize the high field limit where the polarization approaches 100%, which is not accessible for an electron gas. This work is mainly pedagogical in nature.

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