

Abstract Submitted  
for the DAMOP16 Meeting of  
The American Physical Society

**Optimized sensitivity of an ensemble NV-diamond magnetometer** JENNIFER SCHLOSS, MIT, JOHN BARRY, MATTHEW TURNER, RON WALSWORTH, Harvard University — Improvement in sensitivity and development of imaging will allow NV-diamond ensemble magnetometry to be competitive and surpass current tools. NV magnetometers allow for novel measurements due to the close proximity one can bring the sensor to the source along with the high spatial ( $\sim 10$  nm) and temporal ( $\sim 1$  us) possible. Here we present efforts to improve the sensitivity of our bulk NV-diamond magnetometer to  $< 1$  pT/. This will be accomplished through application of advanced pulse sequences, engineering enhancements to improve sensitivity, and development in diamond fabrication techniques to improve the intrinsic qualities of the sensor.

Matthew Turner  
Harvard Univ

Date submitted: 29 Jan 2016

Electronic form version 1.4