

Abstract Submitted  
for the DAMOP18 Meeting of  
The American Physical Society

**Strongly interacting homogeneous Fermi gases in two and three dimensions** CEDRIC WILSON, BISWAROOP MUKHERJEE, ZHENJIE YAN, PARTH PATEL, AIRLIA SHAFFER, LEV KENDRICK, Massachusetts Institute of Technology, JULIAN STRUCK, Ecole Normale Suprieure / PSL Research University, CNRS, RICHARD FLETCHER, MARTIN ZWIERLEIN, Massachusetts Institute of Technology — We create and study a homogeneous Fermi gas with strong interactions in uniform trapping potentials. Here we present three current research themes, and outlook for future experiments. We study the temperature dependence of spin impurities and observe a polaron to bare particle crossover, observe quantum limited sound attenuation by local density modulation, and present measurements of the temperature dependence of the contact. Furthermore, we detail progress on upgrading our apparatus for achieving a uniform 2d Fermi gas with strong interactions.

Cedric Wilson  
Massachusetts Institute of Technology

Date submitted: 26 Jan 2018

Electronic form version 1.4