

Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Unconventional superfluid in a two-leg fermionic ladder SHUN UCHINO, DPMC-MaNEP, University of Geneva, AKIYUKI TOKUNO, College de France, THIERRY GIAMARCHI, DPMC-MaNEP, University of Geneva — We show that a novel unconventional superfluid triggered by a spin-orbit coupling is realized in a repulsively interacting fermionic ladder system. A competition between spin singlet and triplet pairings occurs due to the breaking of inversion symmetry. We show that both superfluid orders decay algebraically with the same exponent except for the special coupling constants for which a dominant superfluid is determined solely by the spin-orbit coupling. We also propose an experiment to observe such phases with cold atoms.

Shun Uchino
DPMC-MaNEP, University of Geneva

Date submitted: 14 Nov 2013

Electronic form version 1.4