

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Itinerant Ferromagnetism in Rashba Spin-Orbit Coupled Semiconductors WEIZHE LIU, School of Physics, University of New South Wales, Sydney, Australia, ROLAND WINKLER, Department of Physics, North Illinois University, De Kalb, USA, ULRICH ZUELICKE, School of Chemical and Physical Sciences, Victoria University of Wellington, New Zealand, ROBERT JOYNT, Department of Physics, University of Wisconsin-Madison, Madison, USA, DIMITRIE CULCER, School of Physics, University of New South Wales, Sydney, Australia — We theoretically studied the itinerant ferromagnetism in the Rashba spin-orbit coupled 2D electron system by oppositely shifting the two spin-split Fermi surfaces, on condition that electric current vanishes. We found that the system is stable for the infinitesimal displacements only if rs is smaller than around 10. But when rs becomes much larger than 10, the system becomes unstable at the original state, and finally we obtained another stable state with nonzero spin polarisation.

Weizhe Liu
Univ of New South Wales

Date submitted: 05 Nov 2015

Electronic form version 1.4