

Abstract Submitted
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Spin transport and dynamics in the F/N junction HUA LI, KEVIN BEDELL, Boston College — We study the spin transport in the low temperature regime (often referred to as the precession-dominated regime) between a ferromagnetic Fermi liquid (FFL) and a normal metal metallic Fermi liquid (NFL), the F/N junction, which is considered one of the basic spintronic devices. In particular, we explore the propagation of spin waves and transport of magnetization through the interface of the F/N junction where non-equilibrium spin polarization is created on the normal metal side of the junction by spin injection. We calculate the probable spin wave modes in the precession-dominated regime on both sides of the junction especially on the NFL side where the system is out of equilibrium. Proper boundary conditions at the interface are introduced to establish the transport of the spin properties through the F/N junction. In the end, a possible transmission conduction electron spin resonance experiment is suggested on the F/N junction to see if the predicted spin wave modes could propagate through the junction.

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