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Corrections to Fermi Liquid theory in 2D in a magnetic field AN-DREY CHUBUKOV, University of Maryland, JOSEPH BETOURAS, Max Planck Inst. for Physics of Complex Systems, DMITRI EFREMOV, Technical University, Dresden — In this work, we consider a Fermi liquid in two dimensions in a magnetic field, and study the effects of the Zeeman splitting on thermodynamics. We derive the temperature dependence of the spin susceptibility $\chi_s(T)$ from the thermodynamic potential, and show explicitly how $2p_F$ scattering gives rise to a non- analytic temperature dependence of the susceptibility. We explain why small momentum scattering does not give rise to non-analytic $\chi_s(T)$. We discuss experimental implications of this result.

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