

Abstract Submitted
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**Onsager relations and the detection of current-induced spins by
Ferromagnetic contacts** INANC ADAGIDELI, University of British Columbia
— The recent prediction of intrinsic spin Hall currents raised many questions about
methods of detection. We focus on the theoretical issues related to the detection of
spin currents and accumulations via ferromagnetic contacts. Along the way, based
on Onsager-like relations for the conductance, we show the unfeasibility of detecting
spin current from a non-magnetic conductor in a two probe geometry within linear
response. It is nevertheless possible to detect spin current in a four probe geometry,
in which the spin current flowing into the ferromagnet leads to a potential difference
between the Hall contacts. We calculate the Hall conductivity and compare this
effect to the Anomalous Hall effect. Work done in collaboration with G.E.W. Bauer
and B.I. Halperin

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