

Abstract Submitted
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Induced spin currents in alkali films FUNING SONG, GERD BERGMANN, DOUG GARRETT, Dept. of Physics and Astronomy, University of Southern California — Sandwiches of FeK and FeCs are prepared at helium temperature and under ultra-high vacuum. The mean free path within these sandwiches can exceed the film thickness by a factor of five. This implies almost perfect specular reflection of the electrons at the interfaces. Furthermore, the experiments suggest that the specular reflections for spin-up and spin-down electrons are different at the Fe interface, resulting in a spin current in the alkali films. In order to detect this current, dilute Pb impurities are condensed on top of the free surface of the alkali films. Strong spin-orbit scatterers, such as Pb, introduce an Anomalous Hall Effect in the presence of a spin current, which can be easily detected through straightforward Hall measurements. The results of the AHE experiments clearly indicate the existence of a local spin current.

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