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Detecting Spin Currents in Superconductors by Doppler-shifted Spin-polarized Photoemission[1] ARIS ALEXANDRADINATA, J.E. HIRSCH, University of California San Diego — A method is proposed to detect high-velocity spin currents by exploiting the Doppler effect to energetically separate photoelectrons of opposite spin polarizations. We predict that a highly polarized photocurrent will emit from the edge of the valence band. For spin currents that are predicted to exist in superconductors by the Spin Meissner effect, the expected Doppler-induced energy separation is measurable with current experimental resolutions.

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