

Abstract Submitted
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**Polarization-controlled picosecond currents
in topological insulators**¹ ALEXANDER HOLLEITNER, CHRISTOPH KAR-
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— Controlling spin currents in topological insulators may lead to applications in
future spintronic devices [1]. Here, we show that surface currents in Bi₂Se₃ can
be controlled by circularly polarized light on a time-scale of a picosecond with a
fidelity near unity even at room temperature. We reveal the temporal interplay of
such ultrafast spin currents with photo-induced thermoelectric and drift currents in
optoelectronic circuits [2]. [1] C. Kastl, et al, APL 101, 251110 (2012). [2] C. Kastl
et al. under review (2013).

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