

Abstract Submitted
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Symmetry Rules Shaping Spin-Orbital Textures in Surface States¹ CHIU-YUN LIN, KENNETH GOTLIEB, ZHENGLU LI, University of California at Berkeley, CHRIS JOZWIAK, Advanced Light Source, Lawrence Berkeley National Laboratory, JI HOO RYOO, CHEOL-HWAN PARK, Seoul National University, ZAHID HUSSAIN, Advanced Light Source, Lawrence Berkeley National Laboratory, STEVEN G. LOUIE, ALESSANDRA LANZARA, University of California at Berkeley — A complete understanding of a surface state subject to strong spin-orbit coupling requires mapping all of its key degrees of freedom. We study topological insulators using spin- and angle-resolved photoemission to elucidate the rules that couple an orbital texture to a spin texture. From this, we demonstrate where in a material's band structure one should expect an orbital-dependent spin texture, and where a surface state can have a single, orbital-independent spin texture.

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Chiu-Yun Lin
University of California at Berkeley

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