Entangled spin-orbital texture in topological insulators

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Abstract

With their spin-helical metallic surface state, topological insulators define a new state of matter with strong application potential in spintronics. In this talk, I will illustrate how modern spin and electron spectroscopy techniques can be used to reveal the entangled spin-orbital texture of topological insulators, and how full spin-polarization-control can be achieved via photoelectron interference. Finally, I will also discuss the interplay of polarity- and topologically-driven surface states in topological Kondo insulators.