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**Mapping the spin texture of topological insulators with spin, energy, momentum and time resolution**

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The helical spin texture of surface electrons in topological insulator has attracted a great deal of interest in the past few years. Although this texture was predicted with the discovery of topological insulators and experimentally confirmed in a few points in the momentum space, its full experimental verification has been non trivial because of the low efficiency of spin resolved experiments. In this talk I will present new results on a, Bi<sub>2</sub>Se<sub>3</sub> topological insulator, obtained by using an innovative ultra-high efficiency spin-resolved photoemission instrument, which provide a complete mapping of the spin texture of these electrons both in momentum and time space. I will show that the spin texture of photoelectrons can be fully manipulated by light and how this manipulation evolves as a function of time, paving the way of use of these materials for spintronics applications.