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【188】Ultrafast Light-Induced Lifshitz Transition in High Tc superconductor Cuprates.

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The relation between the pseudogap phase and the superconducting dome in high Tc superconductors is still not well understood despite intense research. To develop better insight into this relation and understand the electronic properties of these materials, we study the Fermi surface via time- and angle-resolved photoemission spectroscopy (tr-ARPES). We measure the size and topology of the Fermi surface, allowing us to quantify the carrier density and the charge interactions. For Bi2212 at 22% doping, the Fermi surface shows a pump induced Lifshitz transition, accompanied by the lack of a pseudogap. For optimally doped Bi2212, we observe a Lifshitz transition (from hole-like to e- like) at high fluences of light.

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