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【122】 Temperature dependent photoemission study of the charge-ordered phases in IrTe₂

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We investigate the electronic structure of IrTe₂ to elucidate the origin of its charge-ordered phase transitions. Here, we present an X-ray photoemission spectroscopy study as a function of temperature across the IrTe₂ phase transitions. Our surface sensitive measurements reveal new results on the specific nature of the transitions in contradiction with the literature. According to our measurements, the transition at 270 K remains first-order, occurring within only a few Kelvin, while the transition at 180 K is second-order, developing over a range of several tens of Kelvin. In parallel, we perform an angle-resolved photoemission spectroscopy study as a function of temperature, which allows us to confirm the previous deductions.

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