

# ARPES evidence of translational symmetry breaking in superconducting Fe(Te<sub>1-x</sub>Sex)

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In systems with coexisting translational periodicities, the momentum distribution of the ARPES spectral weight  $A(k, \omega)$  encodes the strength of the underlying potentials [1,2]. We have performed an unusually broad survey of  $k$ -space in superconducting Fe(Te<sub>1-x</sub>Sex) samples, covering several Brillouin zones. We find that  $A(k, \omega)$  does not exhibit the overall periodicity of the crystal, with a unit cell (Fe<sub>2</sub>) containing two formula units.  $A(k, \omega)$  follows instead the periodicity of the Fe layer, with a smaller and rotated (Fe<sub>1</sub>) unit cell. This result demonstrates that translational symmetry is broken in the “11” phase, most likely by a modulation of the positions of the chalcogen atoms.

[1] J. Voit et al., Science 290, 501 (2000).

[2] C.-H. Lin et al., Phys. Rev. Lett. 107, 257001 (2011).

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