

Abstract Submitted  
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**What do we actually see in ARPES? Generalized unfolding method and application to Fe-based superconductors** MILAN TOMIC, HARALD O. JESCHKE, ROSER VALENTI, Goethe University — Interpretation of angle resolved photoemission (ARPES) measurements relies heavily on comparison with ab-initio (DFT) band structures. However, ARPES-observed band structures and DFT band structures often disagree on the unit cell periodicities as well as position of band structure features relative to the Brillouin zone. We present a novel, symmetry-based approach to band structure unfolding which utilizes irreducible representations of space groups. Within the unified framework we can treat both the translational and point group symmetries and explain how ARPES measurements sometimes reflect crystal structure features with a reduced unit cell. We will present some examples in the context of Fe-based superconductors.

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