

Novel FeSe-based superconductors: where we are and what is to be expected?

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I will present a personal prospective on the the two latest families of the Fe-based superconductors, $KxFe_ySe_2$, and FeSe monolayers. I will argue that the simplified crystallography that is usually assumed when analyzing electronic structure and superconductivity is probably insufficient. In particular, I will discuss the role of the interface in both cases and will present a case of intrinsic S_4 symmetry breaking. Interpretation of recent orbital-selective ARPES measurements is an important, if not crucial, part of the problem, and will be discussed in the talk, as well as the role of the so-called "Se etching", necessary for superconductivity in FeSe monolayers