

Abstract Submitted
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Site specific spin dynamics in BaFe₂As₂¹ PRISCILA ROSA, University of California at Irvine, Universidade Estadual de Campinas, CRIS ADRIANO, THALES GARITEZI, Universidade Estadual de Campinas, TED GRANT, ZACHARY FISK, University of California at Irvine, RICARDO URBANO, PASCOAL PAGLIUSO, Universidade Estadual de Campinas — The role of structural parameters in low-symmetry layered systems, such as iron pnictides/chalcogenides (Fe-Pn/Ch), cuprates and some heavy fermions, has become crucial for the understanding of their properties. Here, we combine macroscopic techniques and electron spin resonance to study the spin-density wave (SDW) phase suppression due to changes of structural parameters in Ba_{1-x}Eu_xFe_{2-y}M_yAs₂ single crystals ($M = \text{Co, Cu, Mn, Ni, and Ru}$). We show that for all transition metal substitutions, there is an increasing anisotropy and localization of the Fe 3*d* electrons at the FeAs plane. This increasing planar xy/x^2-y^2 symmetry seems to be a propitious ingredient for the emergence of superconductivity in this class of materials.

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