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Energy-dependent modulations in the local density of states in the under-doped and optimally doped $\text{NaFe}_{1-x}\text{Co}_x\text{As}$ ¹ LIHUA PAN, C.S. TING, Texas Center for Superconductivity and Department of Physics, University of Houston, Houston, Texas 77204, USA — Motivated by recent scanning tunneling microscopy experiment investigating the quasiparticle interference (QPI) patterns in $\text{NaFe}_{1-x}\text{Co}_x\text{As}$, we investigate the energy-dependent modulation of local density of states induced by a weak defect using the first-order T-matrix approximation. In the under-doped sample with spin-density-wave ordering, the electrons disperse along the antiferromagnetic direction but remain static along the ferromagnetic direction. The optimally doped sample exhibits square-like QPI patterns. The corresponding QPI in \mathbf{k} space is also presented. These numerical results exhibit essential features as those measured by the experiment.

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