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**Quasiparticle interference of  $C_2$ -symmetric surface states in LaOFeAs parent compound** XIAODONG ZHOU, CUN YE, PENG CAI, Department of Physics, Tsinghua University, Haidian, Beijing 100084, P.R. China, XIANGFENG WANG, XIANHUI CHEN, National Laboratory for Physical Science at Microscale and Dept of Physics, University of Science and Technology of China, Hefei, 230026, P.R. China, YAYU WANG, Department of Physics, Tsinghua University, Haidian, Beijing 100084, P.R. China — We present scanning tunneling microscopy studies on the LaOFeAs parent compound of iron pnictide superconductors [1]. High resolution spectroscopic imaging reveals strong standing wave patterns induced by quasiparticle interference of two-dimensional surface states. Fourier analysis shows that the distribution of scattering wavevectors exhibits pronounced two-fold ( $C_2$ ) symmetry, strongly reminiscent of the nematic electronic state found in  $\text{CaFe}_{1.94}\text{Co}_{0.06}\text{As}_2$  [2]. The implications of these results to the electronic structure of the pnictide parent states will be discussed.

[1] X.Zhou *et al.* arXiv:1008.2642

[2] T.M.Chuang *et al.* Science **327**, 181 (2010)

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