

Abstract Submitted  
for the MAR09 Meeting of  
The American Physical Society

**Effects of Magnetic Order and Pairing on the Fermi Surface of the Pnictides**<sup>1</sup> A. MOREO, M. DAGHOFER, R. YU, Oak Ridge National Lab, University of Tennessee, J. A. RIERA, Universidad Nacional de Rosario, Argentina, E. R. DAGOTTO, Oak Ridge National Lab, University of Tennessee — Based on numerical and mean-field calculations performed on models for the FeAs planes of the newly discovered Fe-based superconductors, we present results for the expected shape of the Fermi surface both in the undoped and the doped regime. In the undoped case, numerical studies, Lanczos and VCA, are performed for a two-orbital model, while a mean-field formalism allows us to study a more realistic 4 orbital case. A pocket structure is obtained for the intermediate Hubbard coupling regime of parameters in which the system is magnetically ordered but still metallic [1]. We construct a mean-field model for light electronic doping based on the pairing operator that is found by the unbiased Lanczos calculations in the two orbital model, i.e. a spin singlet, orbital even, operator transforming according to the  $B_{2g}$  representation of the group  $D_{4h}$ . [2] We present the resulting nodal structure [3] and discuss comparisons with ARPES results.

[1] R. Yu et al., submitted. [2] M. Daghofer et al., arXiv:0805.0148, to appear in PRL. [3] A. Moreo et al., submitted.

<sup>1</sup>Supported by the NSF grant DMR-0706020, the Div. of Materials Sciences and Eng., U.S. DOE under contract with UT-Batelle, LLC

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Date submitted: 20 Nov 2008

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