

Abstract Submitted
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Universal Magnetic and Structural Behaviors in the Iron Pnictides¹ STEPHEN WILSON, COSTEL ROTUNDU, Lawrence Berkeley National Laboratory, ZAHRA YAMANI, Canadian Neutron Beam Centre, National Research Council, PATRICK VALDIVIA, BYRON FREELON, University of California, Berkeley, EDITH BOURRET-COURCHESNE, Lawrence Berkeley National Laboratory, ROBERT BIRGENEAU, University of California, Berkeley / Lawrence Berkeley National Lab — In this talk, we will present analysis of the static, antiferromagnetic order in the parent and lightly doped iron pnictides suggesting that the magnetic order parameters in these systems collapse onto two universal curves. The relevant, empirical parameter controlling the detailed phase behavior of the magnetic phase transitions in these systems will be presented. Additionally, we will remark upon the seemingly general feature in the iron pnictides of an identical evolution (as a function of reduced temperature) of both the magnetic and structural phase transitions. The implications of these empirical observations for the universal magnetic and structural phase behavior in the iron pnictides will be discussed.

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