Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Electronic doping in heterostructures of strongly correlated materials IVAN GONZALEZ, Department of Physics and Astronomy, The University of Tennessee, Knoxville, TN, ROGER G. MELKO, Department of Physics and Astronomy, University of Waterloo, Canada, ELBIO DAGOTTO, Department of Physics and Astronomy, The University of Tennessee, Knoxville, TN — Heterostructures of strongly correlated materials have attracted much attention recently. One of the main points of interest is the possibility of the stabilization of new phases at the interface between two different strongly correlated materials. In this talk, we present a study of the electronic properties of a heterostructure made of strongly correlated materials. The heterostructure is built up by alternating several layers of two different materials. The layers are thin enough (about 10 units cells) so the charges can be transferred all throughout the heterostructure. Calculations are performed using the Density Matrix Renormalization Group algorithm together with a Poisson equation formalism to account for the charge redistribution produced by the interfaces. We show that for realistic values of the parameters of the model the properties of the heterostructure are greatly determined by the behaviour at the interfaces.

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Date submitted: 27 Nov 2007 Electronic form version 1.4