Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Pair Density Wave correlations in the Kondo-Heisenberg Model

EDUARDO FRADKIN, Department of Physics, University of Illinois, EREZ BERG, Department of Physics, Harvard University, STEVEN KIVELSON, Department of Physics, Stanford University — We show, using density matrix renormalization group calculations complemented by field theoretic arguments, that the spin gapped phase of the one dimensional Kondo-Heisenberg model exhibits quasi-long range superconducting correlations only at a non-zero momentum. The local correlations in this phase resemble those of the pair density wave state which was recently proposed to describe the phenomenology of the striped ordered high temperature superconductor La_{2-x}Ba_xCuO_4, in which the spin, charge, and superconducting orders are strongly intertwined.

1Supported in part by the NSF, under grants DMR-0758462, DMR-0531196, and DMR-0757145, and by the DOE under Contracts DE-FG02-07ER46453 and DE-FG02-06ER46287

Eduardo Fradkin
Department of Physics, University of Illinois

Date submitted: 19 Nov 2010

Electronic form version 1.4