Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Phase diagram of the anisotropic two-dimensional bilinear biquadratic spin-1 Heisenberg model CHRISTOPH PUETTER, MICHAEL LAWLER, HAE-YOUNG KEE, Department of Physics, University of Toronto, Toronto, Canada M5S 1A7 — The anisotropic bilinear biquadratic Heisenberg model on a square lattice has been proposed to exhibit deconfined critical phenomena (DCP) based on QMC simulations and effective field theoretical studies [1, 2]. We investigate the phase transitions of the model using slave boson representation. Our mean field approach suggests a first order transition between the nematic and the disordered regime except at the tricritical SU(3) symmetric point. We will also discuss the relevance of our results to the DCP.
[1] T. Grover and T. Senthil, Phys. Rev. Lett. 98, 247202 (2007)
[2] K. Harada, N. Kawashima and M. Troyer, J. Phys. Soc. Jpn. 76, 013703 (2007)

Christoph Puetter
Department of Physics, University of Toronto, Toronto, Canada M5S 1A7

Date submitted: 29 Nov 2007 Electronic form version 1.4