

Abstract Submitted  
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**Quantum criticality in “easy-plane”  $SU(N)$  spin model<sup>1</sup>**

JONATHAN DEMIDIO, RIBHU K. KAUL, Univ of Kentucky — We investigate a two dimensional quantum spin model with “easy-plane”  $SU(N)$  anisotropy which describes an  $N - 1$  component superfluid of hard-core bosons. This model exhibits a transition from a magnetically ordered state, corresponding to superfluid order of the bosons, to a non-magnetic state with broken lattice translation symmetry (a valence bond solid). It has been shown previously that the fully  $SU(N)$  symmetric version of this model exhibits a continuous phase transition consistent with the scenario of deconfined quantum criticality. Using quantum Monte Carlo techniques we study the critical properties in the “easy-plane” case.

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