

Abstract Submitted  
for the MAR14 Meeting of  
The American Physical Society

**Deconfined** **Quantum**  
**Criticality and Conformal Phase Transition**<sup>1</sup> FLAVIO NOGUEIRA, Theoretische Physik III, Ruhr Universitaet Bochum, ASLE SUDBO, Dept. of Physics, Norwegian University of Science and Technology — We introduce a new perspective on deconfined quantum criticality within a field-theoretic framework. We show that in the allegedly weak first-order transition regime from a Néel to a valence-bond solid in  $SU(N)$  antiferromagnets, a so-called conformal phase transition leads to a genuine deconfined quantum critical point. In such a transition, the gap vanishes as the critical point is approached, while the spin stiffness at zero temperature has a universal jump at the critical point. We discuss the logarithmic corrections to scaling observed numerically and interpret them in terms of the conformal phase transition. The behavior of the Néel and valence-bond solid susceptibilities are discussed at zero and finite temperatures.

<sup>1</sup>Work supported by SFB TR 12 (Deutsche Forschungsgemeinschaft) and Research Council of Norway, Grant Nos. 205591/V20 and 216700/F20

Flavio Nogueira  
Theoretische Physik III, Ruhr Universitaet Bochum

Date submitted: 15 Nov 2013

Electronic form version 1.4