Deconfined Quantum Criticality and Conformal Phase Transition¹ 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.

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