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Quantum critical scaling behavior of deconfined spinons[1] FLAVIO NOGUEIRA, Institute for Theoretical Physics, Free University Berlin and Ames Laboratory, STEINAR KRAGSET, ASLE SUDBO, Department of Physics, Norwegian University of Science and Technology, Trondheim, Norway — The quantum scaling behavior of deconfined spinons for a class of field theoretic models of quantum antiferromagnets is considered. The competition between the hedgehogs and the Berry phases is discussed from a renormalization group perspective. An important result following from our analysis is the computation of the anomalous dimension for the decay of spin correlations. Our results confirm the expectation that the transition from a Néel to a valence-bond solid state belongs to a completely new universality class.

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