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Exact Critical Exponents for the Antiferromagnetic Quantum Critical Metal Supporting a One-Dimensional Fermi Surface in General Space Dimension ANDRES SCHLIEF, PETER LUNTS, SUNG-SIK LEE, McMaster University and Perimeter Institute for Theoretical Physics — Antiferromagnetic quantum phase transitions play an important role in strongly correlated systems like electron-doped cuprates , iron pnictides and heavy fermion compounds. In this talk, we will present recent theoretical progress in understanding the scaling properties of the strange metal that arises at the antiferromagnetic quantum critical point. Using a non-perturbative field theoretic renormalization group analysis we extract the *exact* critical exponents characterizing the quantum critical metal that supports a one-dimensional Fermi surface in d-spatial dimensions. In particular, for $d = 2$ we predict the scaling form of the fermion spectral function and the spin susceptibility at low temperatures, which are testable through angle resolved photoemission spectroscopy (ARPES) and neutron scattering experiments, respectively.

1. P. Lunts, A. Schlief, S. Sur and S.-S Lee. To appear.

2. A. Schlief, P. Lunts and S.-S. Lee. To appear.

3. A. Schlief, P. Lunts and S.-S. Lee. arXiv:1608.06927.

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