Finite temperature properties close to metallic quantum critical points

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The theoretical description of quantum critical points in metals is one of the main unsolved problems in condensed matter physics. In this talk I will discuss the experimentally relevant example of an Ising-nematic quantum critical point in two-dimensional metals, where the rotational symmetry of the Fermi surface is spontaneously broken. Substantial progress towards a solution was made recently by Schattner et al., who realized that this problem is amenable to sign problem free Monte Carlo simulations. Surprisingly, their finite temperature results are consistent with a dynamical critical exponent z=2, rather than z=3, as expected from field theoretical approaches. Im going to discuss finite temperature properties based on an Eliashberg-type approach and show how this discrepancy might be resolved.