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Universal conductance of nanowires near the superconductor-metal quantum transition

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We consider wires near a zero temperature transition between superconducting and metallic states. The critical theory obeys hyperscaling, which leads to a universal frequency, temperature, and length dependence of the conductance; quantum and thermal phase slips are contained within this critical theory. Normal (NN), superconducting (SS) and mixed (SN) leads on the wire determine distinct universality classes. For the SN case, wires near the critical point have a universal d.c. conductance which is independent of the length of the wire at low temperatures.