



Scaling behavior of resistive transitions in thin superconducting films

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Abstract

Resistive transitions to the superconducting state have been investigated for variations of both temperature and external magnetic field. Experimental data were obtained for thin films of vanadium and indium. The excess conductivity σ' in the transition region was found to satisfy scaling laws (law of corresponding states), i.e. σ' is described by some universal function of the reduced variables $\tau = 1 - T/T_c$, $h = 1 - H/H_c$, and $j = 1 - I/I_c$.