Abstracts

Investigating high-T/sub c/ superconductors-a cryogenic microwave broad-band calibration

T. Reuss and J. Richard. "Investigating high-T/sub c/ superconductors-a cryogenic microwave broad-band calibration." 2000 Transactions on Microwave Theory and Techniques 48.7 (Jul. 2000, Part II [T-MTT] (Special Issue on Microwave and Communication Applications at Low Temperature)): 1286-1289.

A new cryogenic microwave broad-band calibration method for the measurement of the complex input impedance of a one-port network is presented in this paper. The complex impedance is calculated from measurements of the complex reflection coefficient made by a vector network analyzer. To validate the method, low-temperature measurements of metallic microstrips with a known temperature behavior of the resistivity were compared to simulations. Its broad-band nature makes it particularly powerful when exploring a region of the magnetic-field temperature-frequency parameter space of superconductors that was previously inaccessible with a comparable accuracy.

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