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Bolometric calibration of microwave power in low temperature systems[1] SERGEY VITKALOV, SEAN BYRNES, SCOTT DIETRICH, Physics Department, City College of the City University of New York, New York 10031, USA — We present a simple and effective method for ascertaining the true MW field applied to small samples mounted on a cold finger in vacuum in low temperature systems. As the MW power delivered to the sample through a coax is dissipated over an impedance-matching terminal resistor, the cold finger requires less power from the temperature control system. By monitoring the control system voltage with and without microwave power, the microwave electric field delivered to sample can be obtained for a wide range of microwave frequencies. The proposed technique accurately obtains the microwave field delivered to the sample without the requirement of further corrections due to dissipation and/or reflection of the microwave elsewhere in the system.

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