

Abstract Submitted  
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**A Novel System for Accurate Cryogenic S-Parameter Measurements** LEONARDO RANZANI, LAFE SPIETZ, JOSE AUMENTADO, NIST, Boulder — In order to study microwave devices operating at cryogenic temperatures (4K and below), an accurate characterization of their full scattering parameters is needed. Simple response calibration using a single through standard is usually performed at cryogenic temperatures due to its simplicity, but it is inaccurate since it only determines 4 of the 10 unknowns present in a general two port network environment. In this talk we will discuss a fully automated through-reflect-line (TRL) calibration system suitable for accurately characterizing 2-port S parameters for devices such as SQUID amplifiers and other cryogenic microwave circuits. Data for some typical devices up to 8GHz will be presented.

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