Abstracts

Precision Temperature Reference for Microwave Radiometry (Short Papers)

W.N. Hardy. "Precision Temperature Reference for Microwave Radiometry (Short Papers)." 1973 Transactions on Microwave Theory and Techniques 21.3 (Mar. 1973 [T-MTT]): 149-150.

The calibration of microwave radiometers is normally achieved by replacing the antenna with a cooled reference termination and then applying corrections for ohmic and reflective losses of the antenna, and for the nonideality of the reference termination. The uncertainty in this correction is the dominating factor in the precision of many high-quality radiometers, and for some applicationsit is unacceptably large. An alternative is to point the antenna at a target of known temperature. To the extent that this temperature is known and the target is reflectionless and encompasses the full view of the antenna, the calibration is exact and no further corrections are required. A target suitable for high-precision radiometry has been developed that has an accurately known radiometric temperature, a very low reflection coefficient, and whose geometry is well suited to the calibration of horn antennas.

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