Abstracts

Calibration of millimeter-wave polarimeters using a thin dielectric sheet

C.W. O'Dell, D.S. Swetz and P.T. Timbie. "Calibration of millimeter-wave polarimeters using a thin dielectric sheet." 2002 Transactions on Microwave Theory and Techniques 50.9 (Sep. 2002 [T-MTT]): 2135-2141.

We present the theory and application of a novel calibration system for millimeter and microwave polarimeters. The technique is a simple extension of the conventional wire-grid approach, but employs a thin dielectric sheet rather than a grid. The primary advantage of this approach is to obtain a calibration signal that is only slightly polarized, which can be beneficial for certain applications such as astronomical radiometers that measure very low levels of polarization, or systems with a small dynamic range. We compare this approach with other calibration techniques and discuss its successful use in the calibration of the polarization observations of large angular regions experiment, designed to measure polarization in cosmic microwave background radiation.

❑ Return to main document.