Abstracts

Millimeter Wavelength Resonant Structures (1962 [MWSYM])

R.W. Zimmerer, M.V. Anderson, G.L. Strine and Y. Beers. "Millimeter Wavelength Resonant Structures (1962 [MWSYM])." 1962 PGMTT National Symposium Program and Digest 62.1 (1962 [MWSYM]): 1-3.

At the Boulder Laboratories of the National Bureau of Standards we have been engaged in research in the millimeter wavelength region of the electromagnetic spectrum for several years. Under the direction of Dr. W. Culshaw, the Fabry-Perot interferometer was adapted for use at these wavelengths. Using a plane parallel mirror Fabry-Perot interferometer a precision study of several dielectrics was undertaken at a wavelength of 6 mm. At these wavelengths we have found that diffraction losses become significant when the mirror separation is comparable to the mirror dimensions. Following the suggestion of Fox and Li, we decided to make use of confocal mirrors in the Fabry-Perot interferometer in order to reduce diffraction losses and allow increased separation of the mirrors and consequent increased Q of the resonant structure.

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