

## The Application of the Focussed Fabry-Perot Resonator to Plasma Diagnostics

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*R.I. Primich and R.A. Hayami. "The Application of the Focussed Fabry-Perot Resonator to Plasma Diagnostics." 1964 Transactions on Microwave Theory and Techniques 12.1 (Jan. 1964 [T-MTT]): 33-42.*

The use of a focussed Fabry-Perot resonator at microwave frequencies for plasma diagnostics is discussed. It is shown theoretically that improvements in sensitivity in the measurements of the properties of transparent plasmas and dielectrics of two to three orders in magnitude can be expected. Losses have been neglected. It is indicated that under certain circumstances, refractive index changes in the gaseous environment may be significant. A method of measuring these changes is included. The extension of these techniques to the optical part of the spectrum is discussed and is shown to be promising. Experimental results, obtained with the use of a cavity at 70 Gc, are presented and appear to confirm the main predicted features.

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