Abstracts

A Ferrite-Tuned Coaxial Cavity (Correspondence)

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This communication presents a calculation of the electromagnetic wave propagation constant beta in a coaxial cavity partially loaded with ferrite and dielectric materials. The cavity was designed to operate around 600 Mc. The advantage of using a coaxial cavity compared to a rectangular cavity at 600 Mc is the fact that a coaxial cavity is much smaller than a rectangular cavity. Electronically tuned cavities have been built utilizing ferrite materials in the X-band frequeucy range. However, until recently no ferrite materials have been produced that could be used feasibly in the UHF frequency range. Tuning cavities with ferrites has certain advantages that some other electronically tuned cavities do not have with regard to power relations. For example, cavities have been built that are electronically tuned with the use of varactor diodes. These types of cavities cannot tolerate medium power levels, whereas, ferrite materials can withstand higher powers.

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