Abstracts

The Effects of Reflections from Randomly Spaced Discontinuities in Transmission Lines

R.K. Moore. "The Effects of Reflections from Randomly Spaced Discontinuities in Transmission Lines." 1957 Transactions on Microwave Theory and Techniques 5.2 (Apr. 1957 [T-MTT]): 121-126.

Reflections from randomly spaced transmission line discontinuities can cause serious attenuation and distortion of pulses in the lines, and the presence of reflections at the sending end may be undesirable. The effect of these discontinuities may be described in terms of the mathematics for combining outputs from oscillators with random frequencies. The location of the discontinuity corresponds to the frequency of an oscillator. The phase constant of the transmission line is analogous to time for the oscillators. Use of spectrum and filter analogies permits approximate determination of discontinuity locations from measurements. Use of known space and size distributions permits statistical prediction of attenuation and of size of reflected wave at the sending end.

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