Abstracts

Neurocomputed Model of Open-Circuited Coaxial Probes

D. Tuck and S. Coad. "Neurocomputed Model of Open-Circuited Coaxial Probes." 1995 Microwave and Guided Wave Letters 5.4 (Apr. 1995 [MGWL]): 105-107.

An artificial multi-layered feedforward neural network has been developed which transforms reflection coefficient data measured using a coaxial probe and network analyser, into the permittivity values of the fluid the probe touches. This eliminates the need for de-embedding of data from the measurement plane via empirical models of the physical cable. Back propagation training and testing was performed on a 0.25 in. diameter coaxial probe, using data spanning the frequency range 200 MHz-16 GHz taken on nine fluids. The successful results indicate that a new nonparametric technique can join the other permittivity measurement schemes for coaxial probes.

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