Abstracts

Broad-Band Microwave Measurements with Transient Radiation from Optoelectronically Pulsed Antennas

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A broad-band microwave measurement technique, based on picosecond transient radiation from optoelectronically pulsed antennas is described. It is performed with exponentially tapered coplanar stripline antennas which are integrated with the photoconductive devices used for ultrafast pulse generation and sampling. The signal analysis required for deriving the desired physical properties from the measured time-domain waveforms is discussed. This is a coherent technique that independently determines both the real and the imaginary parts of the dielectric constants of materials, from 10 to 130 GHz, in a single experiment. Some representative results are presented.

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