Abstracts

Propagating Modes Along a Thin Wire Located Above a Grounded Dielectric Slab (Dec. 1977 [T-MTT])

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The possible propagating modes supported by a wire located parallel to a grounded dielectric slab are investigated. While at low frequencies, a "quasi-TEM" behavior is exhibited, it is shown numerically that under certain conditions, a very different "surface-attached" character emerges. These results suggest the possibility of similar behavior occurring in the related, but more difficult to analyze configuration of open microstrip lines. The particular structure we analyze here is of interest mainly because of its potential application in air strip ground radar monitoring systems, which conceivably can consist of a horizontal wire located above a reinforced concrete slab lying above a conducting earth surface.

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