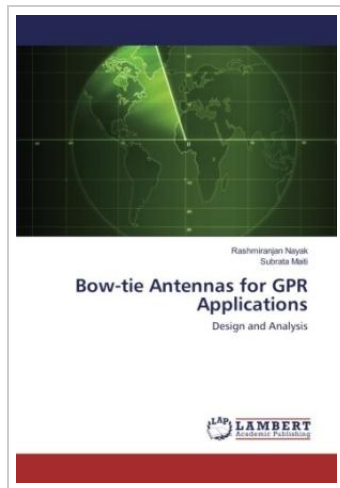




Bow-tie Antennas for GPR Applications

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Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | Design and Analysis | Ground penetrating radar (GPR) is a widely used nondestructive testing technology, which uses electromagnetic techniques to map the buried structures in the shallow sub-surface due to its ability to provides high depth of penetration, good resolution, low false alarm rate, low cost, less time consuming, the ability to form three-dimensional images of the buried objects for ease of visualization and interpretation, etc. The efficiency of the GPR system significantly depends on the antenna performance as the signal has to propagate through lossy and inhomogeneous media, i.e. soil, concrete, etc. Bow-tie antennas are widely used as they can provide critical antenna performances, i.e. low frequency of operation, UWB performance, minimal ringing, compact, lightweight, high gain and efficiency, etc. This text analyzes the basic design challenges of Bow-tie antennas for GPR scenario and proposes two improved Bow-tie antennas for GPR applications. The various design techniques are optimistically utilized to the conventional Bow-tie antenna to make them suitable for the GPR applications. The antennas are investigated in the GPR environment by advanced simulation and validation techniques. | Format: Paperback | Language/Sprache: english | 92 pp.



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