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On optimization of the ground conductor of helical antennas
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Abstract
Helical antennas may be considered a combination of two kinds of radiators, the dipole and loop antennas. Hence, many parameters control the operation of helical antennas such as circumference of helix, spacing between turns, pitch angle, and number of turns. Some of these parameters have important impact on the performance of helical antennas like maximum gain, operating bandwidth, radiation mode, and 3dB beamwidth. In this paper, we examine the effect of the size of ground plane on the performance of helical antenna. It is shown that the ratio of the diameter of the helix to the diameter of the ground plane has significant impact on the performance of helical antennas. © 2014 IEEE.

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