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THE RADIATION QUALITY FACTOR OF VERTICALLY POLARIZED SPHERICAL ANTENNAS ABOVE A CONDUCTING GROUND PLANE

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Abstract
The radiation quality factor of small vertically polarized antennas above a ground plane is investigated. Although the quality factor of small antennas in free space has been investigated extensively in the past, the exact effect of a conducting ground plane on the antenna bandwidth is not clearly understood. In this thesis, quality factors of vertically polarized antennas above a ground plane are computed and compared with their free-space counterparts. The theoretical results on quality factors are validated with simulations of electrically small spherical helix antennas.

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