Abstracts

Mutual coupling between millimeter-wave dielectric-resonator antennas

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The mutual coupling between aperture coupled cylindrical dielectric-resonator antennas (DRAs) is analyzed using the finite-difference time domain method. The perfectly matched layer is used as absorbing boundary conditions. The voltage excitation source of microstrip structure is based on the Zhao's model, in which the source plane or the terminal plane can be moved very close to the discontinuity so that the computational domain can be reduced substantially. The numerical results are verified by measurements and reasonable agreement between theory and experiment is obtained. It is shown that this method is highly efficient for the analysis of DRAs.

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