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Indoor Propagation Modelling using the Volume Integral Equation

New developments in energy efficient wireless communications systems and indoor location and tracking algorithms have created a greater demand for accurate propagation models. In this paper a full wave propagation model based on the volume electric field integral equation (VEFIE) is applied to the problem of indoor propagation modelling. The model is validated against measurements and it is shown to produce very accurate results. A 2D to 3D model is examined as a method to couple the accuracy of the 3D model with the speed of the 2D version. The ability for the frequency domain VEFIE model to compute time domain information is also examined.

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