Integration of Geophysical Properties and Geospatial Information for Telecommunication Modeling

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ABSTRACT:

Both geophysical and geospatial data provide important information in the establishment of the optimal telecommunication systems especially in the mobile telecommunication environment. The objective of this study is to utilize geophysical properties and geospatial information in the analysis of the telecommunication environment through point-to-point wave property modeling. Geophysical properties associated with wave propagation parameters of the earth surface were analyzed based on hierarchical land classification using Landsat ETM+ and IKONOS images. Three-dimensional geospatial information was obtained by processing stereo aerial images. The results show that the accurate geospatial information and reliable geosphysical property of the surface improve the prediction of receiving power of the receivers located near corners of the buildings where diffractions occur. The wave property model developed from accurate telecommunication environment could be applied to optimal cell planning and delay time analysis.