



# Turkish Journal of Electrical Engineering & Computer Sciences

Turkish Journal

of

Novel Time Domain Radiowave Propagators for Wireless Communication Systems

Electrical Engineering &  
Computer Sciences

 [Keywords](#)  
 [Authors](#)



[elektrik@tubitak.gov.tr](mailto:elektrik@tubitak.gov.tr)

[Scientific Journals Home Page](#)

F. AKLEMAN

ITU Dept. of Electronics and Communication Engineering,  
80626, Maslak, İstanbul-TURKEY  
e-mail: funda@ehb.itu.edu.tr

M. O. ÖZYALÇIN

ITU Dept. of Electronics and Communication Engineering,  
80626, Maslak, İstanbul-TURKEY  
Turkish Airforce Academy, Dept. of Electronics Eng.,  
34807, Yesilyurt, İstanbul-TURKEY  
e-mail: oozyalcin@hho.edu.tr

L. SEVGİ

Electronics and

Communication Engineering Department, Doğuş University,  
Zeamet Sok. No: 21, Acıbadem/Kadıköy, İstanbul-TURKEY  
e-mail: lsevgi@dogus.edu.tr

**Abstract:** In this study, novel time domain wave propagators are used in path loss calculations for macro and micro cell coverage planning in wireless communication systems. Both Transmission Line Matrix (TLM) and Finite-Difference Time-Domain (FDTD) based propagators, which were introduced recently and validated and verified on different canonical propagation scenarios, are used for this purpose. Examples are chosen both in rural and urban areas, where two propagators are compared with each other. Excellent agreement between the results obtained via two propagators is presented. The results presented here are very encouraging and these propagators are shown to be powerful tools for not only academic research, but also as precise engineering tools.

**Key Words:** Time domain wave propagators, wireless communication systems, FDTD, TLM, terrain effects

Turk. J. Elec. Eng. & Comp. Sci., **10**, (2002), 199-218.

Full text: [pdf](#)

Other articles published in the same issue: [Turk. J. Elec. Eng. & Comp. Sci.,vol.10,iss.2.](#)