## Bibliography

- [1] Rfcafe. www.rfcafe.com, February 2011.
- [2] L. Digisonde. www.hfunderpants.com, April 2011.
- [3] D. E. Kerr, *Propagation of Short Radio Waves*. MIT Radiation Laboratory Series, New York: McGraw-Hill, 1951.
- [4] A. Türkboyları, "Radar propagation modelling using the split step parabolic equation method," Master's thesis, Middle East Technical University, 2004.
- [5] H. V. Hitney, "Refractive effects from VHF to EHF: Part a: Propagation mechanisms," AGARD Lecture Series, vol. LS-196, pp. 4A1-4A13, 1994.
- [6] R. E. Collin, Antennas and Radiowave Propagation. McGraw-Hill, 1985.
- [7] Recommendation ITU-R P.676-8, "Attenuation by atmospheric gases," 2009.
- [8] R. Olsen, D. Rodgers, and D. Hodgei, "The  $aR^b$  relation in the calculation of rain attenuation," *IEEE Trans. Antennas and Propagation*, vol. AP-26, pp. 318–329, March 1978.
- [9] Recommendation ITU-R P.838-3, "Specific attenuation model for rain for use in prediction methods," 2005.
- [10] Z. W. Zhao and Z. S. Wu, "Millimeter-wave attenuation due to fog and clouds," Int. J. Infrared and Millimeter Waves, vol. 21, pp. 1607–1615, October 2000.
- [11] Recommendation ITU-R P.840-4, "Attenuation due to clouds and fog," 2009.
- [12] Recommendation ITU-R P.527-3, "Electrical characteristics of the surface of the earth," 1992.
- [13] Recommendation ITU-R P.832-2, "World atlas of ground conductivities," 1999.
- [14] W. Ament, "Toward a theory of reflection by a rough surface," Proc. IRE, vol. 41, pp. 142–146, 1953.
- [15] A. R. Miller, R. M. Brown, and E. Vegh, "New derivation for the rough-surface reflection coefficient and for the distribution of sea-wave elevations," *Proc. IEE-H*, vol. 131, pp. 114–116, April 1984.
- [16] W. Ellison, A. Balana, G. Delbos, K. Lamkaouchi, L. Eymard, C. Guillou, and C. Prigent, "New permittivity measurements of seawater," *Radio Science*, vol. 33, pp. 639–648, May-June 1998.
- [17] D. K. Barton, "Low-angle radar tracking," Proc. IEEE, vol. 62, pp. 687-704, June 1974.
- [18] W. T. Fishback, "Methods for calculating field strength with standard refraction," in *Propagation of Short Radio Waves* (D. E. Kerr, ed.), MIT Radiation Laboratory Series, ch. 2, pp. 112–140, New York: McGraw-Hill, 1 ed., 1951.
- [19] M. Dolukhanov, Propagation of Radio Waves. MIR Publishers, 1971.
- [20] M. W. Long, Radar Reflectivity of Land and Sea. Artech House, 2001.
- [21] Recommendation ITU-R P.453-9, "The radio refractive index: Its formula and refractivity data," 2003.
- [22] Recommendation ITU-R P.369-6, "Reference atmosphere for refraction," 1994.
- [23] K. Budden, The Propagation of Radio Waves: The Theory of Radio Waves of Low Power in the Ionosphere and Magnetosphere. Cambridge University Press, 1985.
- [24] L. V. Blake, "Machine plotting of Radio/Radar vertical-plane coverage diagrams," Report 7098, NRL, 1970.
- [25] L. V. Blake, "Radio ray (radar) range-height-angle charts," Report 6650, NRL, 1967.
- [26] A. Sommerfeld, "The propagation of waves in wireless telegraphy," Ann. der Phys., vol. 28, pp. 665–736, March 1909.
- [27] K. A. Norton, "The Propagation of Radio Waves over the Surface of the Earth and in the Upper Atmosphere, Part I," *Proc. IRE*, vol. 24, pp. 1367–1387, 1936.
- [28] R. E. Collin, "Hertzian dipole radiating over a lossy earth or sea: Some early and late 20th-century controversies," *IEEE Antennas and Propagation Magazine*, vol. 46, pp. 65–79, April 2004.

- [29] M. Abramowitz and I. A. Stegun, Handbook of Mathematical Functions with Formulas, Graphs, and Mathematical Tables. New York: Dover Publications Inc., 1964.
- [30] W. C. Chew, Waves and Fields in Inhomogenous Media. New York: Van Nostrand Reinhold, 1990.
- [31] H. Weyl, "The propagation of plane waves over a plane conductor," Ann. Phys, vol. 60, pp. .481–500, 1919.
- [32] K. A. Norton, "The physical reality of space and surface waves in the radiation field of radio antennas," *Proc. IRE*, vol. 25, pp. 1192–1202, September 1937.
- [33] J. A. C. Weideman, "Computation of the complex error function," SIAM J. Numer. Anal., vol. 31, pp. 1497–1518, October 1994.
- [34] R. Li, "The accuracy of Norton's empirical approximations for ground wave attenuation," *IEEE Trans. Antennas and Propagation*, vol. 31, pp. 624–628, July 1983.
- [35] G. N. Watson, "The diffraction of radio waves by the earth," *Proceedings of the Royal Society*, vol. A95, pp. 83–99, 1918.
- [36] L. B. Felsen and K. Marcuvitz, Radiation and Scattering of Waves. Prentice Hall, 1973.
- [37] J. R. Wait, "The ancient and modern history of EM ground-wave propagation," *IEEE Trans. Antennas and Propagation*, vol. 40, pp. 7–24, October 1998.
- [38] J. E. Freehafer, "Physical optics," in *Propagation of Short Radio Waves* (D. E. Kerr, ed.), MIT Radiation Laboratory Series, ch. 2, pp. 58–112, New York: McGraw-Hill, 1 ed., 1951.
- [39] H. Bremmer, "Applications of operational calculus to ground-wave propagation, particularly for long waves," *IRE Trans. Antennas and Propagation*, vol. 6, pp. 267–272, July 1958.
- [40] IEEE Std. 211-1990, "IEEE standard definitions of terms for radio wave propagation," 1997.
- [41] A. R. Miller and E. Vegh, "Computing the grazing angle of specular reflection," *International Journal of Mathematical Education in Science and Technology*, vol. 21, no. 2, pp. 271–274, 1990.
- [42] C. Levis, J. T. Johnson, and F. L. Teixeira, Radiowave Propagation: Physics and Applications. John Wiley & Sons, 2010.
- [43] N. DeMinco, "Propagation prediction techniques and antenna modeling (150 to 1705 kHz) for intelligent transportation systems (ITS) broadcast applications," *IEEE Antennas and Propagation Magazine*, vol. 42, pp. 9–34, August 2000.
- [44] G. Millington, "Groundwave propagation over an inhomogeneous smooth earth," *Proc. IEE (UK) Pt. III*, vol. 96, no. 39, pp. 53-64, 1949.
- [45] F. Dickson, J. Egli, J. W. Herbstreit, and G. S. Wickizer, "Large reductions of VHF transmission loss and fading by the presence of a mountain obstacle in beyond-line-of-sight paths," *Proc. IRE*, vol. 41, pp. 967–969, August 1953.
- [46] S. M. Babin, G. S. Young, and J. A. Carton, "A new model of the oceanic evaporation duct," *Journal of Applied Meteorology*, vol. 36, pp. 193–204, March 1997.
- [47] M. I. Skolnik, Introduction to Radar Systems. Mc-Graw Hill International Editions, 3 ed., 2001.
- [48] A. Ishimaru, Wave Propagation and Scattering in Random Media. Academic Press, 1978.
- [49] V. I. Tatarski, Wave Propagation in a Turbulent Medium. New York: Mc-Graw Hill, 1961.
- [50] Recommendation ITU-R P.671-1, "Propagation prediction techniques and data required for the design of trans-horizon radio-relay systems," 1992.
- [51] Recommendation ITU-R P.373-8, "Definitions of maximum and minimum transmission frequencies," 2007.
- [52] Recommendation ITU-R P.1239-2, "ITU-r reference ionospheric characteristics," 2009.
- [53] Recommendation ITU-R P.533-10, "Method for the prediction of the performance of HF circuits," 2009.
- [54] G. A. Hufford, "An integral equation approach to the problem of wave propagation over an irregular terrain," Quart. Appl. Math., vol. 9, no. 4, pp. 391–404, 1952.
- [55] M. Leontovich and V. Fock, "Solution of the problem of electromagnetic waves along the earthSs surface by the method of parabolic equation," J. Physics (USSR), vol. 10, pp. 13–24, 1946.
- [56] K. H. Craig and M. F. Levy, "Parabolic equation modelling of the effects of multipath and ducting on radar systems," *IEE Proceedings-F*, vol. 138, pp. 153–162, April 1991.
- [57] D. J. Thomson and N. R. Chapman, "A wide-angle split-step algorithm for the parabolic equation," J. Acoust. Soc. Amer., vol. 74, pp. 1848–1854, December 1983.

- [58] J. R. Kuttler, "Differences between the narrow-angle and wide-angle propagators in the split-step fourier solution of the parabolic wave equation," *IEEE Trans. Antennas and Propagation*, vol. 47, pp. 1131–1140, July 1999.
- [59] M. Levy, Parabolic Equation Methods for Electromagnetic Wave Propagation. Electromagnetic Wave, IEE, 2000.
- [60] A. Beilis and F. D. Tappert, "Coupled mode analysis of multiple rough surface scattering," J. Acoust. Soc. Amer., vol. 66, pp. 811–826, September 1979.
- [61] A. E. Barrios, "A terrain parabolic equation model for propagation in the troposphere," *IEEE Trans. Antennas and Propagation*, vol. 42, pp. 90–98, January 1994.
- [62] Y. Okumura, E. Ohmori, T. Kawano, and K. Fukuda, "Field strength and its variability in VHF and UHF land-mobile radio service," Rev. Elec. Comm. Lab., vol. 16, pp. 825–873, 1968.
- [63] M. Hata, "Empirical formula for propagation loss in land mobile radio services," *IEEE Trans. Veh.* Tech., vol. 29, pp. 317–325, 1980.
- [64] C. F. Report, "Digital mobile radio: COST 231 view on the evolution towards 3rd generation systems," tech. rep., Commission of the European Communities and COST Telecommunications, Brussels, 1999.
- [65] R. Janaswamy, Radiowave Propagation and Smart Antennas for Wireless Communications. Kluwer Academic Publishers, 2001.
- [66] L. Barclay, Propagation of Radiowaves. The Institution of Engineering and Technology, 2nd ed., 2003.
- [67] J. Walfish and H. L. Bertoni, "A theoretical model of UHF propagation in urban environments," *IEEE Trans. Antennas and Propagation*, vol. 36, pp. 1788–1796, December 1988.
- [68] F. Ikegami, S. Yoshida, and M. Umehira, "Propagation factors controlling mean field strengths on urban streets," *IEEE Trans. Antennas and Propagation*, vol. 32, pp. 822–829, August 1984.