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Name Surname: Yahya Kemal BAYKAL

Education: B.Sc., Electrical Engineering, [Middle East Technical University](#), Ankara, Turkey 1974.

M.Sc. "Heat Distribution in an Inhomogeneous Model of Head Exposed to Microwave Radiation due to Loop or Dipole Antenna Excitations", Electrical Engineering, [Middle East Technical University](#), Ankara, Turkey, 1977.

Ph.D. "Coherence and Turbulence Effects on the Intensity Scintillations at Optical Frequencies", EECS, [Northwestern University](#), Evanston, IL. USA 1982.

Professional Experience and Scholarships Received:

2007 – Vice Rector, [Cankaya University](#), Ankara, Turkey.

2008 - Acting Manager, Graduate School of Natural and Applied Sciences, [Cankaya University](#), Ankara, Turkey.

2005 – Chairman, [Cankaya University](#), Electronic and Communication Engineering Department, Ankara, Turkey.

2004 – Professor, [Cankaya University](#), Electronic and Communication Engineering Department, Ankara, Turkey.

2003 - 2004 Associate Professor, [Cankaya University](#), Electronic and Communication Engineering Department, Ankara, Turkey.

1996 - 2002 General Manager (1998-2002), Assistant General Manager (1996-1998), İltek Telekomünikasyon San. ve Tic. A.Ş. (Iskratel) Company.

1987 - 1995 Professional Systems Manager, Türk Philips Trades A.Ş. Company.

1987, November – Received Associate Professorship

1987-1987 Assistant Professor, Electrical Engineering Department, [Middle East Technical University](#), Ankara, Turkey.

1985 - 1987 Project Manager, Teletaş Company (Alcatel), R&D Fiber Optics Group.

1984 - 1985 Assistant Professor, Electrical Engineering Department, [Hacettepe University](#), Ankara, Turkey.

1984 - 1984 Assistant Professor, Electrical Engineering Department, [Middle East Technical University](#), Ankara, Turkey.

1982 - 1984 Military, Telecommunications School, Ankara, Turkey.

1981 - 1982 Royal E. Cabell Dissertation Year Fellowships from [Northwestern University](#), Evanston, Illinois, USA.

1981 Teaching Assistanship, EECS Department, [Northwestern University](#), Evanston, Illinois, USA

1977 - 1981 Ph.D Scholarship from the [Turkish Ministry of Education](#).

1975 - 1977 Research Assistant, Electrical Engineering Department, [Middle East Technical University](#), Ankara, Turkey.

Courses Offered:

Fiber Optic Telecommunication, MS, Electrical Engineering Department, Middle East Technical University, Ankara, Turkey.

Fourier Optics, MS, Electrical Engineering Department, Middle East Technical University, Ankara, Turkey.

Electromagnetics Theory, BS, Electrical Engineering Department, Hacettepe University, Ankara, Turkey.

Antenna and Propagation, BS, Electrical Engineering Department, Hacettepe University, Ankara, Turkey.

Telecommunication Systems, MS, Electronic and Communication Engineering Department, Çankaya University, Ankara, Turkey.

Remote Sensing, MS, Electronic and Communication Engineering Department, Çankaya University, Ankara, Turkey.

Telecommunication Networks, MS, Electronic and Communication Engineering Department, Çankaya University, Ankara, Turkey.

Advanced Telecommunication Techniques, MS, Electronic and Communication Engineering Department, Çankaya University, Ankara, Turkey.

Probability and Random Processes, BS, Electronic and Communication Engineering Department, Çankaya University, Ankara, Turkey.

Introduction to Telecommunication Networks, BS, Electronic and Communication Engineering Department, Çankaya University, Ankara, Turkey.

Digital Signal Processing, BS, Electronic and Communication Engineering Department, Çankaya University, Ankara, Turkey.

Telecommunication Networks, BS, Electronic and Communication Engineering Department, Çankaya University, Ankara, Turkey.

Analytic Techniques in Electronic and Communication Engineering, Çankaya University, Ankara, Turkey.

Projects Participated:

Determining the Obstructions in the Urinary Tract through Non Invasive Clinical Measurements (1978).

Effects of Atmospheric Turbulence to Atmospheric Transmittance (Supported by American Air Force) (1980-1982).

140 Mbit/s Fiber Optics Line Terminal Equipment Manufacturing Licence Work (1985-1987).

Fiber Optics Cable Manufacturing Feasibility Work (1985-1987).

System Integration of Hotel Management Computer Networks (1988).

Establishment of Cable TV Distribution Systems for PTT covering Ankara and Adana Regions (1990-1993).

Establishment of Cable TV Control Center for PTT in Ankara (1991).

Establishment of Çeşme-İzmir Highway Toll Collection System (1992).

Establishment of 140 Mb/s Video Codec Transmission System for PTT (1989,1994).

Procurement, Installation and Maintenance of Rural Area Telephone Exchanges for Türk Telekom (1996-2002).

Pilot Tests for Türk Telekom for the Integration of No.7 Signalling to the Rural Area Telephone Exchanges (2000).

Fiber Access Systems, ISDN and XDSL Pilot Tests for Türk Telekom (2001).

Effects of source beam types on optical wave propagation in turbulent atmosphere, TUBITAK - RFBR Joint Project (2009-)

PUBLICATION LIST

- 1) A.Hızal and Y. K. Baykal, "Heat potential distribution in an inhomogeneous spherical model of a cranial structure exposed to microwaves due to loop or dipole antennas", IEEE Trans. Microwave Theory and Techniques, MTT-26, 607-612, Aug. 1978.
- 2) Y. Baykal and M. A. Plonus, "Two-source, two-frequency spherical wave structure functions in atmospheric turbulence", J. Opt. Soc. Amer., 70, 1278-1279, Oct. 1980.
- 3) Y. Baykal, C. F. Ouyang and M. A. Plonus, "Scintillation index for a temporally partially coherent spherical wave light source in weak turbulence", Radio Science, 16, 343-345, May-June 1981.
- 4) Y. Baykal, C. F. Ouyang, M. A. Plonus and S. J. Wang, "Transmitter and receiver aperture averaging for the intensity fluctuation of a beam wave in the turbulent atmosphere", Digest 1981 URSI/IEEE AP-S Intl. Symposium, Los Angeles, CA, U.S.A., 108, 16-19 June 1981.

- 5) Y. Baykal and M. A. Plonus, "Frequency averaging for beam waves in weak and very strong turbulence", IEEE Trans. on Antennas and Propagation, AP-30, 802-805, July 1982.
- 6) Y. Baykal, M. A. Plonus and S. J. Wang, "Propagation of partially coherent radiation through atmospheric turbulence", (invited), SPIE 26. Annual Intern. Tech. Symp., San Diego, CA, U.S.A., Aug. 1982. SPIE Proc. Vol. 358, 106-114, Aug. 1982.
- 7) Y. Baykal, M. A. Plonus and S. J. Wang, "The effect of source partial coherence on the intensity fluctuations in atmospheric turbulence", Annual Meeting of Opt. Soc. Am., Tucson, AZ, 18-22 Oct. 1982, J. Opt. Soc. Am., 72, 1810, December 1982.
- 8) M. A. Plonus, Y. Baykal and S. J. Wang, "The coherence of the source in laser beam propagation", (invited), Digest, 1983, OSA Topical Meeting on Optical Techniques for Remote Probing of the Atmosphere, Incline Village, NV, U.S.A., (TU-C17), 1-4 Jan. 1983.
- 9) S. J. Wang, Y. Baykal and M. A. Plonus, "Receiver aperture averaging effects for the intensity fluctuation of a beam wave in the turbulent atmosphere", J. Opt. Soc. Am., Vol. 73, 831-837, June 1983.
- 10) Y. Baykal, M. A. Plonus and S. J. Wang, "The scintillations for weak atmospheric turbulence using a partially coherent source", Radio Science, Vol.18, 551-556, July-Aug. 1983.
- 11) Y. Baykal and M. A. Plonus, "Intensity fluctuations due to a spatially partially coherent source in atmospheric turbulence as predicted by Rytov's method", J. Opt. Soc. Am. A, Vol. 2, 2124-2132, Dec. 1985.
- 12) Y. Baykal, "Intensity fluctuations due to higher-order Gaussian laser modes in weak atmospheric turbulence", Optics Communications, 57, 311-313, May 1986.
- 13) Y. Baykal, "Correlation and structure functions for multimode laser beam incidence in atmospheric turbulence", J. Opt. Soc. Am. A, 4, 817-819, May 1987.
- 14) Y. Baykal, "Scintillation index for a multimode laser incidence in weak atmospheric turbulence", Optics Communications, 62, 295-299, 1 June 1987.
- 15) Yahya Baykal, "Average transmittance in turbulence for partially coherent sources", Optics Communications, 231/1-6, 129-136, 15 Feb 2004.
- 16) Halil T. Eyyuboğlu and Yahya Baykal, "Effects of laser multimode content on the angle-of-arrival fluctuations in free space optics access systems", SPIE, Conference on Fluctuations and Noise, Maspalomas, Gran Canaria, Spain, 25-18 May 2004. SPIE Proc. 5473, 184-190, 2004.
- 17) Yahya Baykal, "Rate averaging in free space optics systems using incoherent sources", SPIE, Eleventh International Symposium on Atmospheric and Ocean Optics/Atmospheric Physics, Tomsk, Russia, June 23 - 26, 2004. SPIE Proc. Gennadii G. Matvienko, Vladimir P. Lukin, Editors, 5743, 100-109, Dec. 2004.
- 18) Halil T. Eyyuboğlu and Yahya Baykal, "Cosine-Gaussian laser beam intensity in turbulent atmosphere", SPIE, Eleventh International Symposium on Atmospheric and Ocean Optics/Atmospheric Physics, Tomsk, Russia, June 23 - 26, 2004. SPIE Proc. Gennadii G. Matvienko, Vladimir P. Lukin, Editors, 5743, 131-141, Dec. 2004.

- 19) Yahya Baykal, "Correlation and structure functions of Hermite-sinusoidal-Gaussian laser beams in a turbulent atmosphere", J. Opt. Soc. Am. A, 21, 1290-1299, July 2004.
- 20) Yahya Baykal and Halil T. Eyyuboğlu, "Dependence of angle-of-arrival fluctuations on source coherence for free space optics links in a turbulent atmosphere", ICTSM12 Proceedings, 121-126, July 2004.
- 21) A. Küçükoğlu ve Yahya Baykal, "Genişbant erişim telekomünikasyon sistemlerinin kullanım kriterleri", II. URSI-Türkiye'2004 Bilimsel Kongresi, Bilkent Üniversitesi, Ankara, Türkiye, Eylül 2004. URSI-Türkiye'2004, İkinci Ulusal Kongresi Kitapçığı, 158-160, Sept. 2004.
- 22) Halil T. Eyyuboğlu and Yahya Baykal, "Analysis of reciprocity of cos-Gaussian and cosh-Gaussian laser beams in turbulent atmosphere", Optics Express, 12, 4659-4674, 04 Oct. 2004.
- 23) Yahya Baykal, Halil T. Eyyuboğlu and Yusuf E. Yenice, "Reduction of scintillations in high rate long distance free space optics communication links", ICIT 2004, Istanbul, Türkiye, 17 – 19 December 2004. Proceedings of ICIT 2004, 55-58, Dec. 2004.
- 24) Yahya Baykal, "Rate averaging in free space optics systems using incoherent sources", Atmospheric and Ocean Optics, 18, 27-31, Jan.-Feb. 2005.
- 25) Halil T. Eyyuboğlu and Yahya Baykal, "Average intensity and spreading of cosh-Gaussian laser beams in the turbulent atmosphere", Applied Optics, 44, 976-983, 20 Feb. 2005.
- 26) Yahya Baykal, "Log-amplitude and phase fluctuations of higher-order annular laser beams in a turbulent medium", J. Opt. Soc. Am. A, 22, 672-679, Apr. 2005.
- 27) Halil T. Eyyuboğlu and Yahya Baykal, "Analysis of laser multimode content on the angle-of-arrival fluctuations in free space optics access systems", Optical Engineering, 44(5), 056002-1, 056002-6, May 2005.
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- 35) Yahya Baykal and Halil T. Eyyubođlu, "Scintillation index of flat-topped-Gaussian beams", *Applied Optics*, 45, 3793-3797, 01 June 2006.
- 36) Halil T. Eyyubođlu, Serap Altay and Yahya Baykal, "Propagation characteristics of higher-order annular Gaussian beams in atmospheric turbulence", *Opt. Commun.*, 264, 25-34, 01 August 2006.
- 37) Halil T. Eyyubođlu, Yahya Baykal and Emre Sermutlu, "Convergence of general beams into Gaussian intensity profiles after propagation in turbulent atmosphere", *Opt. Commun.*, 265, 399-405, 15 Eylül 2006.
- 38) Yahya Baykal, "Beams with arbitrary field profiles in turbulence", (invited) SPIE, XIII International Symposium on Atmospheric and Ocean Optics. Atmospheric Physics, Tomsk, Russia, 02 – 07 July 2006. SPIE Proc. Gennadii G. Matvienko, Victor A. Banakh, Editors, 6522, 652209-1, 652209-12, Nov. 2006.
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- 40) Çađlar Arpali, Serap A. Arpali, Canan Yazıcıođlu, Halil T. Eyyubođlu ve Yahya Baykal, "Yüksek dereceli halkasal Gauss ve düz tepeli ışık hüzmelerinin türbülanslı atmosferde yayılım özellikleri", 3. URSI-Türkiye'2006 Bilimsel Kongresi, Hacettepe Üniversitesi, Ankara, Türkiye, Sept. 2006. URSI-Türkiye 2006, 3. Bilimsel Kongresi Kitapçıđı, 256-258, Sept. 2006.
- 41) Jale Küçükünsal ve Yahya Baykal, "Kablosuz haberleşme teknolojisi Wimax'de dünyadaki durum", 3. URSI-Türkiye'2006 Bilimsel Kongresi, Hacettepe Üniversitesi, Ankara, Türkiye, Sept. 2006. URSI-Türkiye 2006, 3. Bilimsel Kongresi Kitapçıđı, 577-579, Sept. 2006.
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- 45) Halil T. Eyyubođlu and Yahya Baykal, "Scintillations of cos-Gaussian and annular beams", *J. Opt. Soc. Am. A*, 24, 156-162, January 2007.

- 46) Yahya Baykal, Halil T. Eyyuboglu, and Yusuf E. Yenice, "Off-axis Gaussian beams with random displacement in atmospheric turbulence", *Journal of Systemics, Cybernetics and Informatics*, 4(5), 2006.
- 47) Halil T. Eyyuboğlu and Yahya Baykal, "Scintillation characteristics of cosh-Gaussian beams", *Applied Optics*, 46, 1099-1106, 1 March 2007.
- 48) Halil T. Eyyuboğlu and Yahya Baykal, "Generalized beams in *ABCDGH* systems", *Opt. Commun.*, 272, 22-31, April 2007.
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- 53) Serap A. Arpali, Halil T. Eyyuboğlu, and Yahya Baykal, "Scintillation index of higher order cos-Gaussian, cosh-Gaussian and annular beams", *J. Modern Opt.*, 55 (2), 227-239, Jan. 2008.
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- 55) Yahya Baykal and Halil T. Eyyuboğlu, "Scintillations of incoherent flat-topped Gaussian source field in turbulence", *Applied Optics*, 46, 22, 5044-5050, 2007.
- 56) Halil T. Eyyuboğlu, Yahya Baykal, and Yangjian Cai, "Complex degree of coherence for partially coherent general beams in atmospheric turbulence", *J. Opt. Soc. Am. A*, 24 (9), 2891-2901, Sept. 2007.
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- 58) Halil T. Eyyuboğlu and Yahya Baykal, "Transmittance of partially coherent cosh-Gaussian, cos-Gaussian and annular beams in turbulence", *Opt. Commun.*, 278 (1), 17-22, 1 Oct. 2007.
- 59) Yangjian Cai, Yuntian Chen, Halil T. Eyyuboğlu, and Yahya Baykal, "Scintillation index of an elliptical Gaussian beam in a turbulent atmosphere", *Opt. Lett.* 32 (16), 2405-2407, 2007.
- 60) Halil T. Eyyuboğlu, Yahya Baykal, and Yangjian Cai, "Degree of polarization for partially coherent general beams in turbulent atmosphere", *Applied Physics B - Lasers and Optics*, 89 (1), 91-97, 2007.

- 61) Yangjian Cai, Halil T. Eyyubođlu, and Yahya Baykal, "Propagation of anomalous hollow beams in a turbulent atmosphere", Progress in Electromagnetics Research Symposium (PIERS) 2008, Hangzhou, China, 24-28 March 2008.
- 62) Yahya Baykal, Halil T. Eyyubođlu, and Yangjian Cai, "Formulation of scintillations for optical incidence of arbitrary field profile", Progress in Electromagnetics Research Symposium (PIERS) 2008, Hangzhou, China, 24-28 March 2008. Progress In Electromagnetics Research Symposium, Hangzhou, China, 779-782, March 24-28, 2008.
- 63) Halil T. Eyyubođlu, Yahya Baykal, and Yangjian Cai, "Propagation of partially coherent beams after a source plane ring aperture", Progress in Electromagnetics Research Symposium (PIERS) 2008, Hangzhou, China, 24-28 March 2008. Progress In Electromagnetics Research Symposium, Hangzhou, China, 783-789, March 24-28, 2008.
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- 65) Yuntian Chen, Yangjian Cai, Halil T. Eyyubođlu, and Yahya Baykal, "Scintillation properties of dark hollow beams in a weak turbulent atmosphere", Applied Physics B - Lasers and Optics, 90 (1), 87-92, Jan. 2008.
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- 76) Olga Korotkova, Min Yao, Yangjian Cai, Halil T. Eyyuboğlu, and Yahya Baykal, "State of polarization of a stochastic electromagnetic beam in an optical resonator", *J. Opt. Soc. Am. A*, 25 (11), 2710-2720, November 2008.
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2009. Çankaya Üniversitesi, 2. Mühendislik ve Teknoloji Sempozyumu Kitapçığı, 19-24, 30 Nisan - 1 Mayıs 2009.

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