Curriculum Vitae of Muhsin Caner GÖKÇE

Personal Information:

Date of Birth	January 1985
Citizenship	Turkish
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Title	Associate Professor
ORCID	https://orcid.org/0000-0003-4465-1983

Education:

Ph.D. (2016) Çankaya University, Electronic and Communication Engineering, Ankara, Turkey, **GPA: 3.88 / 4**.
Thesis Title: "*Beam Shaping effects on MIMO Free-Space Optical Communication Systems*"

M.Sc. (2012) Ankara University, Electrical and Electronics Engineering, Ankara, Turkey, **GPA: 3.43 / 4**.
Thesis Title: "*Scintillation Analysis and Evaluation of super Lorentz-Gaussian Laser Beams for Optical Wireless*".

B.Sc. (2010) Çankaya University, Computer Engineering (Double Major), Ankara, Turkey.

B.Sc. (2009) Çankaya University, Electronic and Communication Engineering, Ankara, Turkey, **GPA 3.60 / 4 High Honour**.
Thesis Title: "*Target Tracking with Antenna Arrays*".

Awards&Achievements

2011-2025 TUBITAK, Incentive Program for International Scientific Publications.

2015-2016 Teknogirişim Project 2015 (*High Data Rate Communication with Free Space Optics 0448. TGSD.2015*) from Ministry of Science, Industry and Technology.

2014-2017 TUBITAK, Scholarship Program for PhD Students (2211).

2012- 2016 Scholarship from Çankaya University for Ph.D. Study.

2006-2009 Scholarship from Çankaya University for Undergrad Study.

Work Experience:

2025-2026	**Postdoctoral Researcher**, Delft University of Technology, Department of Aerospace Engineering, Specialized on Laser-Satellite Communications.
2024-2025	**Postdoctoral Researcher**, Delft University of Technology, Department of Geoscience and Remote Sensing, Specialized on Laser-Satellite Communications.
2022-	**Associate Professor** in TED University, Department of Electrical-Electronics Engineering.
2019-2021	**Assistant Professor** in TED University, Department of Electrical-Electronics Engineering.
2015-2020	MG Technology - FSO solutions.
2009-2018	**Instructor** in Çankaya University, Department of Electronic and Communication Engineering.

Publications:

SCI

[J65]	Yalçın Ata, Farah Mahdi Al-Sallami, Muhsin Caner Gökçe, Anna Maria Vegni, Sujan Rajbhandari, and Yahya Baykal, "Optical wireless communication in atmosphere and underwater: Statistical models, improvement techniques, and recent applications," *IEEE Commun. Surveys and Tutorials* (**Accepted**).
[J64]	Muhsin Caner Gökçe, Rudolf Saathof, "Propagation properties of annular beam array for uplink satellite links," *IEEE Transactions on Antennas and Propagation*, (**Accepted**).
[J63]	Muhsin Caner Gökçe, Rudolf Saathof, "Propagation of vortex beams in atmospheric turbulence for uplink satellite links," *Physica Scripta*, vol. 100, no. 12, 125211, **December 2025**.
[J62]	Özden Ergezer, Muhsin Caner Gökçe, and Yahya Baykal, "Fiber coupling efficiency of vortex beams in underwater turbulent medium", *IEEE China Communications*, (**Accepted**).
[J61]	Ekin Erdoğdu, Muhsin Caner Gökçe, and Yahya Baykal, "Scintillation characteristics of annular beam array in

underwater optical links," *Journal of Optics,* vol. 27, no. 9, 095603, **September 2025**.

[J60] Muhsin Caner Gökçe, Yahya Baykal, and Yalçın Ata, "Effects of receiver diversity on bit error rate of underwater optical wireless communication systems in weak oceanic turbulence," *Photonic Network Communications*, vol. 50, article number 2, **August 2025**.

[J59] Hamza Gerçekcioğlu, Yahya Baykal, Muhsin Caner Gökçe, "Multimode laser beam field correlations for vertical links operating in oceanic turbulence," *IEEE Journal of Quantum Electronics*, vol. 61, no. 3, pp. 1-8, **June 2025**.

[J58] Yahya Baykal, Muhsin Caner Gökçe, Yalçın Ata, Hamza Gerçekcioğlu, "Scintillations of high order optical beams in biological tissues," *Journal of the Optical Society of America B,* vol. 42, no. 4, pp. 922-926, **March 2025**.

[J57] Murat Kaan Özcan, Muhsin Caner Gökçe, Yahya Baykal, "Transmittance of Gaussian beams in biological tissues," *Journal of Quantitative Spectroscopy and Radiative Transfer,* vol. 333, 109312, **March 2025**.

[J56] Muhsin Caner Gökçe, Yahya Baykal, Hamza Gerçekcioğlu and Yalçın Ata, "Intensity and degree of coherence of vortex beams in atmospheric turbulence," in *IEEE Journal of Quantum Electronics*, vol. 60, no. 6, pp. 1-8, Dec. 2024, Art no. 6000208, doi: 10.1109/JQE.2024.3484248.

[J55] Yahya Baykal, Muhsin Caner Gökçe, Yalçın Ata, Hamza Gerçekcioğlu, "Field correlations of multimode optical beams in underwater turbulence," *Journal of the Optical Society of America A*, vol. 41, no. 6, pp. 1037-1043, May 2024.

[J54] Yalçın Ata, Yahya Baykal, Muhsin Caner Gökçe, "Analysis of optical wireless MIMO communication in underwater medium," *IEEE Internet of Things Journal*, vol. 11, no. 11, pp. 20660-20672, June 2024.

[J53] Yalçın Ata, Muhsin Caner Gökçe, Yahya Baykal, "Intelligent

reflecting surface aided vehicular optical wireless communication systems using higher order mode in underwater channel," *IEEE Transactions on Vehicular Technology*, vol. 73, no. 8, pp. 11196 – 11208, February 2024.

[J52] Muhsin Caner Gökçe, Yahya Baykal, Yalçın Ata, Hamza Gerçekcioğlu "Multimode beam propagation through atmospheric turbulence," *Journal of Quantitative Spectroscopy and Radiative Transfer,* vol. 314, article number 108857, January 2024.

[J51] Yahya Baykal, Muhsin Caner Gökçe, Hamza Gerçekcioğlu, Yalçın Ata, "Correlations of multimode optical incidences in turbulent biological tissue," *Journal of the Optical Society of America A*, vol. 40, no. 11, pp. 2045-2051, Oct. 2023.

[J50] Muhsin Caner Gökçe, Yalçın Ata, Yahya Baykal, "Tissue turbulence and its effects on optical waves: A review", *Optics Communications*, vol. 546, 129816, Nov. 2023.

[J49] Muhsin Caner Gökçe, Yahya Baykal, Yalçın Ata, "Coupling efficiency of multimode beam to fiber in atmospheric turbulence," *Journal of Quantitative Spectroscopy and Radiative Transfer,* vol. 303, 108590, July 2023.

[J48] Muhsin Caner Gökçe, Yalçın Ata, Yahya Baykal, "Fiber-coupling efficiency in ocean with adaptive optics corrections," *Journal of the Optical Society of America B,* vol. 40, no. 5, pp. 949-957, April 2023.

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[J45] Yalçın Ata, Yahya Baykal, Muhsin Caner Gökçe, "Structure

functions for optical waves in a complex medium of turbulent biological tissues," *Journal of the Optical Society of America A,* vol. 39, no. 12, pp. 2271-2281, Dec. 2022.

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[J43] Yahya Baykal, Yalçın Ata, and Muhsin C. Gökçe, "Laser array field correlations in underwater turbulence", *Journal of Modern Optics*, vol. 69, no. 22, Dec. 2022.

[J42] Yahya Baykal, Yalçın Ata, Muhsin Caner Gökçe, "Tip and tilt corrected bit error rate improvement of M-ary pulse position modulated optical wireless communication in marine atmosphere," *Waves in Random and Complex Media*, vol. 33, no:5-6, pp. 1307-1318, November 2023.

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[J29] Muhsin Caner Gökçe, "Aperture Averaged Scintillation of Gaussian beam in strong oceanic turbulence," *Gazi University Journal of Science,* vol 34(1), pp. 100-110, March 2021.

[J28] Muhsin Caner Gökçe, Yahya Baykal, Yalçın Ata, "Adaptive optics effect on performance of BPSK-SIM oceanic optical wireless communication systems with aperture averaging in weak turbulence," *Journal of Quantitative Spectroscopy and Radiative Transfer*, vol. 256, pp. 107335 (8pp), September 2020.

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[J26] Yalçın Ata, Muhsin Caner Gökçe, and Yahya Baykal, "*M*-ary pulse position modulation performance with adaptive optics corrections in atmospheric turbulence," *J. Mod. Opt.,* vol. 67, no. 6, pp. 563-568, May 2020.

[J25] Yahya Baykal, Muhsin Caner Gökçe, and Yalçın Ata, "Application of adaptive optics on bit error rate of *M*-ary pulse position modulated oceanic optical wireless communication Systems," *Laser Physics*, vol. 30, no. 7, pp. 076202 (8pp), May 2020.

[J24] Muhsin Caner Gökçe, Yahya Baykal, Yalçın Ata, "Effect of anisotropy on performance of *M*-ary phase shift keying subcarrier intensity modulated optical wireless communication links operating in strong oceanic turbulence," *Laser Phys. Letters*, vol. 17, no. 5, pp. 056002 (8pp), April 2020.

[J23] Muhsin Caner Gökçe, Yahya Baykal, Yalçın Ata, "Laser array

beam propagation through liver tissue," *Journal of Visualization*, vol. 23, pp. 331-338, April 2020.

[J22] Muhsin Caner Gökçe, "Average capacity analysis of underwater optical wireless communication links over anisotropic strong oceanic turbulence channels," *J. Opt. Soc. Am. A*, vol. 36, no. 12, pp. 2040-2047, November 2019.

[J21] Muhsin Caner Gökçe, Yahya Baykal, Yalçın Ata, "Binary phase shift keying-subcarrier intensity modulation performance in weak oceanic turbulence," *Phys. Commun.*, vol. 37, pp. 100904, December 2019.

[J20] Yahya Baykal, Muhsin Caner Gökçe, Yalçın Ata, "Anisotropy effect on performance of subcarrier intensity modulated binary phase shift keying optical wireless communication links in weakly turbulent underwater channel", *J. Mod. Opt.*, vol. 66, no 19, pp. 1871-1875, October 2019.

[J19] Yalçın Ata, Yahya Baykal, and Muhsin Caner Gökçe, "Performance of *M*-ary pulse position modulation for aeronautical uplink communications in atmospheric turbulent medium," *Appl. Opt.*, vol. 58, no. 28, pp. 7909-7914, October 2019.

[J18] Yalçın Ata, Yahya Baykal, and Muhsin Caner Gökçe, "Average channel capacity in anisotropic atmospheric non-Kolmogorov turbulent medium," *Opt. Commun*., vol. 451, pp. 129-135, November 2019.

[J17] Muhsin Caner Gökçe, Yahya Baykal, and Yalçın Ata, "*M*-ary phase shift keying-subcarrier intensity modulation performance in strong oceanic turbulence," *Opt. Eng.*, vol. 58, no. 5, pp. 056105, May 2019.

[J16] Yalçın Ata, Yahya Baykal, and Muhsin Caner Gökçe, "Effect of strong atmospheric non-Kolmogorov turbulence on the *M*-ary PSK subcarrier intensity modulated free space optical communications system performance," *Appl. Opt.,* vol. 58, no. 13, pp. 3639-3645, May 2019.

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[J13] Muhsin Caner Gökçe, Yahya Baykal, Yalçın Ata, "*M*-ary PPM performance in strong atmospheric turbulence," *J. Opt. Soc. Am. A,* vol. 35, no. 12, pp. 2020-2025, December 2018.

[J12] Yalçın Ata, Yahya Baykal, Muhsin Caner Gökçe, "*M*-ary Pulse Position Modulation Performance in non-Kolmogorov Turbulent Atmosphere," *Appl. Opt*., vol. 57, no. 24, pp. 7006-7011, August 2018.

[J11] Muhsin Caner Gökçe, Yahya Baykal, Yalçın Ata, "Performance analysis of *M*-ary pulse position modulation in strong oceanic turbulence," *Opt. Commun.,* vol. 427, no. 15, pp. 573-577, November 2018.

[J10] Muhsin Caner Gökçe and Yahya Baykal, "Effects of liver tissue turbulence on propagation of annular beam," *Optik,* vol. 171, pp. 313-318, June 2018.

[J9] Muhsin Caner Gökçe and Yahya Baykal, "Aperture averaging in strong oceanic turbulence," *Opt. Commun.,* vol. 413, no. 7, pp. 196-199, April 2018.

[J8] Muhsin Caner Gökçe, Yahya Baykal "Aperture averaging and BER for Gaussian beam in underwater oceanic turbulence," *Opt. Commun.* vol. 410, no. 5, pp. 830-835. March 2018.

[J7] Muhsin Caner Gökçe, Yahya Baykal, and Murat Uysal, "Performance analysis of multiple-input multiple-output free-space optical systems with partially coherent Gaussian beams

and finite-sized detectors," *Opt. Eng.,* vol. 55, no. 11, pp. 111607, November 2016.

[J6] Muhsin Caner Gökçe, Yahya Baykal, "Scintillation analysis of multiple-input single-output underwater optical links," *Appl. Opt*., vol. 55, no. 22, pp. 6130-6136, August 2016.

[J5] Muhsin Caner Gökçe, Yahya Baykal and Murat Uysal, "Bit error rate analysis of MISO FSO systems," *Wave Random Complex*., vol. 26, no. 4, pp. 642-649, May 2016.

[J4] Muhsin Caner Gökçe, Yahya Baykal and Murat Uysal, "Aperture averaging in multiple-input single-output free space optical systems using partially coherent radial array beams," *J. Opt. Soc. Am. A* vol. 33, no. 6, pp. 1041-1048, June 2016.

[J3] Muhsin Caner Gökçe, Yahya Baykal, Canan Kamacıoğlu, and Murat Uysal, "Aperture averaging in MISO FSO systems," *Opt. Eng.,* vol. 54, no. 6, pp. 066103, June 2015.

[J2] Muhsin Caner Gökçe, Filiz Sari, Faruk Ozek, "Ber analysis for super Lorentz-Gaussian laser beams propagating in turbulent media," *J Fac. Eng. Archit. Gaz.* vol. 28, no. 4, pp. 705-710. 2013.

[J1] Muhsin Caner Gokce and Halil Tanyer Eyyuboglu, "Irradiance fluctuations of partially coherent super Lorentz Gaussian beams", *Opt. Commun.*, vol. 284, no. 20, pp. 4857-4861, 2011.

Conferences

[C11] Muhsin Caner Gökçe, Rudolf Saathof, "Effects of Adaptive Optics on Performance of Laser Satellite Communications," Applications of Lasers for Sensing and Free Space Communications (OPTICA 2025), Prague, Czech Republic, **19-23 October, 2025**.

[C10] Muhsin Caner Gökçe, Rudolf Saathof, "Strehl Ratio Analysis of Vortex Beams in Atmospheric Turbulence for Uplink Satellite Communications," Communications and Observations through Atmospheric Turbulence (COAT 2025), Munich, Germany, **7-9 April, 2025**.

[C9] Muhsin Caner Gökçe, Yahya Baykal, Yalçın Ata, and Hamza Gerçekcioğlu, "Multimode beam propagation in atmospheric turbulence", NATO Workshop on Light Propagation in Random Media and Impact on Wireless Optical Communications Systems in Evolving Climate Conditions, NATO STO Centre for Maritime Research and Experimentation (CMRE), La Spezia, Italy, 29-31 Aug. 2023.

[C8] Ecenaz Özalp, Alp Eren Aydoğdu, Muhsin Caner Gökçe, Yahya Baykal, "Sualtı Kablosuz Optik Haberleşme Sistemleri için Kısmi Eş-Fazlı Lazer Dizi Demeti Sinyal-Gürültü Oranı Analizi," EMO İlk Bildiriler Konferansı, Ankara, Turkey, 10-11 July 2021.

[C7] Muhsin Caner Gökçe, "Adaptive Optics Effects on Average Channel Capacity of Oceanic Optical Wireless Communication Systems in Strong Turbulence," Global Power, Energy and Communication Conference (IEEE-GPECOM), İzmir, Turkey, 20-23 October 2020.

[C6] Muhsin Caner Gökçe, "Effect of Adaptive Optics on Average Channel Capacity of Underwater Optical Wireless Communication System," Innovations in Intelligent Systems and Applications Conference (IEEE-ASYU), İstanbul, Turkey, 15-17 October 2020.

[C5] Yahya Baykal, Yalçın Ata, and Muhsin Caner Gökçe, "Okyanus türbülansında lazer hüzme dizisi sintilasyonu (Laser array beam scintillation in oceanic turbulence)", Signal Processing and Communications Applications Conference (IEEE-SIU), Gaziantep, Turkey, 5-7 October 2020.

[C4] Muhsin C. Gökçe, Yahya Baykal, and Murat Uysal, "Effect of partial coherence on MISO FSO systems," 2015 4th International Workshop in Optical Wireless Communications (IEEE-IWOW), İstanbul, Turkey, 07-08 September 2015.

[C3] Muhsin C. Gökçe, Canan Kamacıoğlu, Murat Uysal, and Yahya Baykal, "Performance analysis of MIMO FSO systems

with radial array beams and finite sized detectors", SPIE Optics + Photonics, 2014 Optical Engineering + Application, Optical Design and Systems Engineering, Laser Beam Shaping XV (OP308) to be held during 17 - 21 August 2014 in San Diego, California, USA. SPIE Proc. A. M. J. van Eijk, C. C. Davis, and S. M. Hammel, Editors, 9224, 922409-1, 922409-13, 2014.

[C2] Muhsin C. Gökçe, Yahya. Baykal, Murat Uysal, "Effect of LED sources on the performance of MIMO FSO systems", Çankaya University Symposium MTS 7, Ankara, pp. 133-135, 2014.

[C1] K. Tugyan, Muhsin C. Gökçe, H.T. Eyyuboğlu, and E. Sermutlu, "Mühendislik uygulamalarında kullanılan çok katlı integralin sembolik çözümü". Çankaya University Symposium MTS 3, Ankara, pp. 371-380, 2010.

Courses Offered:

Undergraduate

Optical Communications: https://www.tedu.edu.tr/sites/default/files/2024-02/s2324_syllabus_ee416_2.pdf

Digital Logic Design: https://www.tedu.edu.tr/sites/default/files/2024-03/s2324_syllabus_ee222_01_revised_due_to_holiday_5.pdf

Power System Analysis: https://www.tedu.edu.tr/en/izlence-detail/50137877

Numerical Methods for Engineering: https://www.tedu.edu.tr/izlence-detail/50115997

Skills:

Computer related

- Matlab
- C++, Java

Languages

- English: Advanced