

Faculty Profile

Dr.K. Sunilkumar,M.E, Ph.D

Assistant Professor(SG)

Department of Electronics and Communication Engineering

Hindustan Institute of Technology and Science

sunilk@hindustanuniv.ac.in



Education

Ph.D :Indian Institute of Science (IISc), Bengaluru

ME :Anna University, Chennai

AMIE :The Institution of Engineers (I), Kolkata

Experience:

2010 - present : Assistant Professor
Hindustan Institute of Technology & Science, Chennai

2009 -2010 : Lecturer
Jerusalem College of Engineering, Chennai

ResearchInterests :Atmospheric aerosols, Wave propagation through random media, Atmospheric Optics.

Recent Publications:

1. **Sunilkumar, K.**, Anand, N.,Satheesh, S. K., Moorthy, K. K., and Ilavazhagan, G. Radiative Effects of Atmospheric Aerosols on theAverage Channel Capacity of Free-Space OpticalCommunication Systems, **Applied Optics (Accepted): DOI: 10.1364/AO.438520**, (2021).
2. **K. Sunilkumar**, N. Anand, S. K. Satheesh, K. Krishna Moorthy, and G. Ilavazhagan, "Enhanced optical pulse broadening in free-space optical links due to the radiative effects of atmospheric aerosols," **Opt. Express** 29, 865-876 (2021).
3. **Sunilkumar, K.**, Anand N., Satheesh S. K., Moorthy, K. K., and Ilavazhagan, G. "Bit error rate of free-space optical communication systems through exponentiated Weibull turbulent channels: Impact of atmospheric aerosol induced warming", **Proc. SPIE, 11834-35** (2021).
4. Anand, N., **Sunilkumar, K.**, Satheesh S. K., and Moorthy, K. K., "Statistics of optical turbulence from multi-year sonic anemometer-thermometer observations at a semi-arid region: effects of aerosols and atmospheric boundary layer dynamics", **Proc. SPIE, 11834-30**, (2021).
5. **Sunilkumar, K.**, Anand N., Satheesh S. K., Moorthy, K. K., and Ilavazhagan, G. "Effect of Atmospheric Aerosols on the Performance of Free-Space Optical Communication Systems in Turbulent Medium", **Proc. OSA, pcAOP**, (2021).

6. Anand, N., **Sunilkumar, K.**, Satheesh, S. K., and Moorthy, K. K. (2021), Daytime Reduction in Near-Surface Optical Turbulence due to Black Carbon Aerosols, **Proc. OSA, pcAOP**, (2021).
7. Anand, N., **Sunilkumar, K.**, Satheesh, S. K., and Moorthy, K. K. (2020), Entanglement of near-surface optical turbulence to atmospheric boundary layer dynamics and particulate concentration: implications for optical wireless communication systems, **Applied Optics**, 59 (5),1471-1483.
8. **Sunilkumar, K.**, Anand N., Satheesh S. K., Moorthy, K. K., and Ilavazhagan, G. "Energy efficiency and the role of air pollution in high-speed optical links in urban locations", **Proc. GAUC, Beijing**, (2020).
9. Anand, N., **Sunilkumar, K.**, Satheesh S. K., and Moorthy, K. K., "Role of atmospheric boundary layer dynamics in regulating the air quality at a semi-arid region in India", **Proc. GAUC, Beijing**, (2020).
10. **Sunilkumar, K.**, Anand, N., Satheesh, S. K., Moorthy, K. K., and Ilavazhagan, G. (2019), Performance of free-space optical communication systems: effect of aerosol-induced lower atmospheric warming, **Optics Express**, 27, 11303-11311.
11. **Sunilkumar, K.**, Anand N., Satheesh S. K., Moorthy, K. K., and Ilavazhagan, G. (2019), Radiative effects of atmospheric aerosols on optical pulse propagation: implications to high data rate Free Space Optical (FSO) communication systems, **Proc. SPIE**, 11133.
12. Anand, N., **Sunilkumar, K.**, Satheesh S. K., and Moorthy, K. K. (2019), Dual role of absorbing aerosols in atmospheric refractive index fluctuations: a closure study from balloon-based and multi-satellite observations, **Proc. SPIE**, 11133.
13. Anand, N., **Sunilkumar, K.**, Satheesh, S. K., and Moorthy, K. K. (2018), Distinctive roles of elevated absorbing aerosol layers on free-space optical communication systems, **Applied Optics**, 57 (25), 7152-7158.
14. **Sunilkumar, K.**, Satheesh, S. K., Moorthy, K. K., and Ilavazhagan, G. (2018), Free Space Optical Communication System through Turbid Media with Pointing Errors, **Proc. Applications of Lasers for Sensing and Free Space Communications, Optical Society of America**.
15. N. Manikantan and **K. Sunilkumar**, "Performance analysis of Polarization Shift Keying (PolSK) wireless optical communication systems over K distributed turbulence channel with pointing errors," **Proc. Wireless Communications, Signal Processing and Networking (WiSPNET)**, Chennai, 2016, pp. 1741-1744.