



Friedrich-Alexander-Universität  
Department Elektrotechnik-Elektronik-  
Informationstechnik

# EEI-Kolloquium

## Pushing Optical Communications Towards the Limit: From Quantum Detection to Nonlinear Fourier Transform

**Prof. Majid Safari**

University of Edinburgh

**Mittwoch, den 31.07.2024, 11:00 Uhr**

Raum 01.021, Cauerstraße 7, 91058 Erlangen.

The modern optical communication technology whether in a wired or wireless form faces significant challenges in the form of signal distortions due to nonlinearity or wireless channel reliability issues that lead to low signal reception. In this seminar, I will look into some of my group's works on the application of quantum detectors for classical and quantum communications, dealing with angular impairments in optical wireless communications, and using tools such as nonlinear Fourier Transform to combat nonlinearity in long-haul optical networks.

*Majid Safari received Ph.D. in Electrical and Computer Engineering from the University of Waterloo, Canada in 2011. He is currently a Professor of Optical and Wireless Communications and the Deputy Head of Institute for Imaging, Data, and Communications (IDCOM) at the University of Edinburgh. He is a recipient of Mitacs Fellowship, Canada and prestigious grants from Leverhulme Trust and EPSRC, UK. He has published more than 150 papers and received best paper awards from IEEE GLOBECOM 2022 and IEEE ICC 2023. Prof Safari's main research interests include the application of optics, information theory, and signal processing in optical, wireless, and quantum communications. He is a senior member of IEEE and an Associate Editor of IEEE Transactions on Communications. He was also an Associate Editor of IEEE Communication Letters from 2015 to 2019 and served as the TPC co-chair of the 4th Workshop on Optical Wireless Communication (IWOW2015) and the OWC workshop at IEEE WCNC 2023.*

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