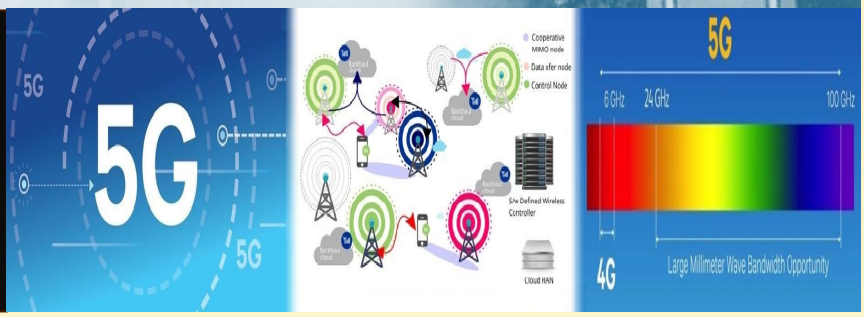
IIT Kanpur Summer Training School on PYTHON + MATLAB + SIMULINK-Based Simulation and Design of 4G/ 5G MIMO-OFDM Wireless Systems (June 11th to 28th, 2022)

Organized by Prof. Aditya K. Jagannatham, EE Department, IIT Kanpur

Kanpur Summer Training School on PYTHON + MATLAB + SIMULINK-Based Simulation and Design of 4G/ 5G MIMO-OFDM Wireless Systems



Important Dates

Course Dates

11th to 28th June, 2022

Last Date for Registration

06th June, 2022

Venue

To be conducted online via Zoom

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Introduction

Welcome to the **IIT Kanpur Summer Training School** on ***PYTHON/ MATLAB/ SIMULINK-Based Simulation and Design of 4G/ 5G MIMO-OFDM*** Wireless Systems. Orthogonal Frequency Division Multiplexing (OFDM) and Multiple-Input Multiple-Output (MIMO) are the latest wireless physical layer technologies which are employed in 4G wireless cellular standards such as 3GPP Long Term Evolution (**LTE/LTE-A**), 5G New Radio (**NR**) and high speed WLAN standards such as **802.11 ac, 802.11ax**. 4G/ 5G MIMO OFDM is envisaged to support data rates in excess of 100 Mbps and thus enable high rate applications in wireless systems such as broadcast/multicast video, HDTV on demand, high speed internet access, interactive gaming amongst others. This is driving wireless semiconductor companies, engineers and researchers to focus heavily on the R&D of MIMO/ OFDM systems, which have proven to be the top technologies for Next Generation wireless networks.

This course is especially intended to provide Professionals, Faculty members, PhD Scholars, Post-Graduate (M.Tech) and Under-graduate (B.Tech) students with an in depth technical exposure to the latest MIMO-OFDM wireless technologies and PYTHON/ MATLAB implementation. The modular approach will provide the participants with a comprehensive treatment of the theory behind these systems such as Fading wireless channels, Multiple-antenna systems, Bit-Error Rate (BER) performance, Beamforming, MIMO Receivers, OFDM Transmit/ Receive processing, SVD-Based MIMO Processing, MIMO-OFDM Technology and others. The school also features extensive supervised **PYTHON/ MATLAB/ SIMULINK projects** for participants to gain direct hands-on experience in MIMO-OFDM technology implementation.

How does this program benefit YOU?

UG/ PG students: *Learn the latest programming techniques/ packages* in ***PYTHON, MATLAB and SIMULINK*** together with practical of 4G/ 5G wireless knowledge for projects/ thesis and also gain an edge in **placements!**

PhD Scholars/ Faculty members: Use **PYTHON, MATLAB and SIMULINK for research** and also to establish ***virtual labs*** or for ***project guidance*** in 4G/ 5G Wireless Technologies!

Industry Professionals: Take your skills to the next level by learning practical **PYTHON/ MATLAB/ SIMULINK** programming for 4G/ 5G ***Wireless System Modeling, Design and Analysis!***

About the Instructor:

Prof. Aditya K. Jagannatham is a Professor in the Electrical Engineering department at IIT Kanpur, where he holds the Arun Kumar Chair Professorship, and is a well known expert and trainer on 5G, Optimization and Machine Learning. He received his Bachelors degree from the Indian Institute of Technology, Bombay and M.S. and Ph.D. degrees from the University of California, San Diego, U.S.A. From April '07 to May '09 he was employed as a senior wireless systems engineer at Qualcomm Inc., San Diego, California, where he was a part of the Qualcomm CDMA technolo□gies (QCT) division. His research interests are in the area of next-generation wireless networks, with special emphasis on various 5G technologies such as massive MIMO, mmWave MIMO, FBMC, NOMA, Full Duplex and others. He has published extensively in leading internation□al journals and conferences. He has been recognized with several awards including the CAL(IT)2 fellowship at the University of California San Diego, Upendra Patel Achievement Award at Qual□comm, P.K. Kelkar Young Faculty Research Fellowship, Qualcomm Innovation Fellowship (QInF), Arun Kumar Chair and the IITK Excellence in Teaching Award.

Target Audience

- UG/ PG Students, PhD Scholars, Faculty and Professionals

For more details and registration information, visit the website
http://www.iitk.ac.in/mwn/STS2022/