

Smart Antennas and Space-time Adaptive Processing

March 28 – April 1, 2016

Overview

A smart antenna is a multi-element antenna where the signals received at each antenna element are intelligently combined to find the direction of arrival of the target signal and a beamforming methodology is used to steer the antenna beam towards the target. It improves the performance a wireless system. The conventional beamforming methodology used in smart antennas requires matrix inversion. It creates difficulty in real time computation and additional signal processing is required to handle the multipath effect. A new approach where the adaptive analysis is done on a snapshot-by-snapshot basis can handle the nonstationary environment quite easily including a coherent multipath environment with blinking interferers. It is a new concept and will be detailed in the course. The method is easy to implement on a signal-processing chip and can be extended to two-dimension, namely space-time adaptive processing. Examples will be given to demonstrate fruitfulness of the method. It will be followed by discussions on beam steering antennas.

Module	Smart antenna, beamforming methodologies, two-dimensional space-time adaptive processing, examples, array antennas for beam steering.
Who can attend	<ul style="list-style-type: none">▪ Engineers and researchers involved in signal processing.▪ Student or faculty from academic and technical institutions.
Fees	<p>The participation fees for taking the course is as follows:</p> <p style="text-align: center;">Student: INR 1000 Faculty/Researcher: INR 5000 Private Industry: INR 10000</p> <p>The above fee includes a working lunch, all instructional materials, computer use for tutorials, internet facility. The participants will be provided with accommodation on payment basis. Part time Ph. D students will not be considered under student category.</p>

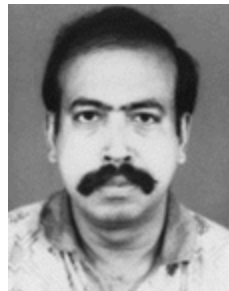
The Faculties



Prof. Tapan Kumar Sarkar is a professor in the Department of Electrical and Computer Engineering, Syracuse University. His current research interest includes numerical solutions of operator equations arising in electromagnetics and signal processing with application to system design.



Prof. Girish Kumar is a professor in the Department of Electrical Engineering, Indian Institute of Technology Bombay. His research interest includes microstrip antennas and arrays, broadband antennas, microwave integrated circuits, EMI/ EMC, RF communication circuits.



Prof. Ajay Chakrabarty is a professor in the Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology Kharagpur. His research interest includes electromagnetics, microwave circuits, antennas and numerical techniques.



Prof. Pradip Sircar is a professor in the Department of Electrical Engineering, Indian Institute of Technology, Kanpur. His research interest includes signal processing and systems, communication theory, computational methods.

Venue

Department of Electronics and Communication Engineering,
National Institute of Technology
Patna, Ashok Rajpath, Patna
800005, Bihar.

Registration Process

1. Fee payment by
Internet Banking:
A/C No. 50306846783
Allahabad Bank, NIT Patna
IFSC: ALLA0212286

OR

Draft:

In favour of GIAN NIT Patna
payable at Patna

2. Send the registration form by email/post to the course coordinator along with the payment details/draft by 25th of March.

Course Coordinator

Dr. Priyanka Mondal
Dept. of ECE
NIT Patna
Email: pmondal@nitp.ac.in

Registration Form

- 1. Name:.....
- 2. Designation:.....
- 3. Address (Office):.....
.....
.....
- 4. Phone:.....
E-mail (compulsory):.....
- 5. Male/ Female:.....
- 6. Highest academic qualification:.....
- 7. Accommodation Required (Y/N):.....
- 8. Bank Draft No.....Date.....
Amounting Rs.....drawn on.....Bank

Date:
Place :

Signature of the Applicant