

## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Civil Engineering - NOC: Microwave Remote Sensing in Hydrology

Subject Co-ordinator - Prof. J. Indu

Co-ordinating Institute - IIT - Bombay

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - Syllabus
- Lecture 2 - History Of Microwave Remote Sensing
- Lecture 3 - Overview Of Active and Passive Microwave Remote Sensing
- Lecture 4 - Fundamentals Laws Of Remote Sensing
- Lecture 5 - Tutorial 1: Python Programming From Beginner Perspective
- Lecture 6 - Scattering Of Microwaves
- Lecture 7 - Synthetic Aperture Radars - Basics
- Lecture 8 - Sar Image Processing - Fundamental Terminologies
- Lecture 9 - Working With Sar Imagery
- Lecture 10 - Understanding Radar Equation
- Lecture 11 - Tutorial 2 : Exploring Alos Palsar Data In Python
- Lecture 12 - Understanding Radar Imagery
- Lecture 13 - Tutorial 3: Introduction To SNAP
- Lecture 14 - Doppler Shift
- Lecture 15 - Speckle
- Lecture 16 - Speckle - How To Handle
- Lecture 17 - Tutorial 4 Part 1: Plotting In 1 D Using Python
- Lecture 18 - Tutorial 4 Part 2: Plotting In 2 D Using Python
- Lecture 19 - Tutorial 4 Part 3: Statistics Using Python
- Lecture 20 - Tutorial 4 Part 4: Hypothesis Testing Using Python
- Lecture 21 - Sar Image Pre Processing
- Lecture 22 - Sar Image Texture
- Lecture 23 - Texture For Image Classification
- Lecture 24 - Polarization
- Lecture 25 - Tutorial 5 Part 1: Speckle Filtering Using Python
- Lecture 26 - Tutorial 5 Part 2: Speckle Filtering Using Python Using Gaussian Filter
- Lecture 27 - Numerical On Radar Remote Sensing
- Lecture 28 - Numerical On Radar Remote Sensing
- Lecture 29 - Image Classification - Basics

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- Lecture 30 - Supervised Classification
- Lecture 31 - Maximum Likelihood Classification
- Lecture 32 - Tutorial 6 Part 1: Sar Image Pre-processing
- Lecture 33 - Tutorial 6 Part 2: Maximum Likelihood Classification In Snap
- Lecture 34 - Unsupervised Classification And Accuracy Assessment
- Lecture 35 - Fuzzy Classification
- Lecture 36 - Tutorial 7 Part 1: Working With Grace Data In Python
- Lecture 37 - Tutorial 7 Part 2: Altimetry Data In Python
- Lecture 38 - Tutorial 7 Part 3: Swot Mission For Altimetry
- Lecture 39 - Radars In Hydrology
- Lecture 40 - Applications Of Radar Remote Sensing In Hydrology
- Lecture 41 - Doppler Weather Radar
- Lecture 42 - Tutorial 8 Part 1: Doppler Weather Radar Data Visualization And Precipitation Estimation
- Lecture 43 - Tutorial 8 Part 2: Doppler Weather Radar Data Visualization And Precipitation Estimation
- Lecture 44 - Radar Altimetry
- Lecture 45 - Measuring Soil Moisture And Terrestrial Water Storage Using Radar Remote Sensing
- Lecture 46 - Tutorial 9: Handling Passive Microwave Observations
- Lecture 47 - Fundamentals Of Passive Microwave Remote Sensing - Part 1
- Lecture 48 - Fundamentals Of Passive Microwave Remote Sensing - Part 2
- Lecture 49 - Applications Of Passive Microwave Remote Sensing In Hydrology
- Lecture 50 - Passive Microwave Radiometers And Their Applications
- Lecture 51 - Tutorial 10: Processing Satellite Precipitation Data Using Python
- Lecture 52 - Introduction To The Basics Of Sar Interferometry
- Lecture 53 - Sar Interferometry (Insar) And Applications
- Lecture 54 - Introduction To Other Modes Of Sar Interferometry And Applications - DInSAR, PSInSAR and DEM's
- Lecture 55 - Tutorial 11: Sar Interferometry Processing Using Snaphu
- Lecture 56 - Tutorial 12 Part 1: Hydrologic Modelling Using Microwave Remote Sensing
- Lecture 57 - Tutorial 12 Part 2: Introduction To Swat+ Hydrological Model
- Lecture 58 - Tutorial 12 Part 3: Introductory Tutorial On Vic Hydrological Model