NPTEL Video Course - Electrical Engineering - NOC:Introduction to Time - Varying Electrical Networks

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

Lecture 30 - Frequency response of an LTV system
Lecture 31 - LTV system example : Time-varying RC filter
Lecture 32 - Linear Periodically Time-Varying Systems (LPTV)
Lecture 33 - Response of an LPTV system to a complex exponential input
Lecture 34 - Harmonic Transfer Functions
Lecture 35 - Zadeh expansion of an LPTV system
Lecture 36 - MNA analysis of LPTV networks
Lecture 37 - MNA stamp of a periodically time varying conductance
Lecture 38 - MNA stamp of a capacitor and a voltage source in an LPTV network
Lecture 39 - Analysis of an example LPTV network - Part 1
Lecture 40 - Analysis of an example LPTV network - Part 2
Lecture 41 - LPTV network analysis, RC filter, time-varying
Lecture 42 - Impedance and admittance in LTI and LPTV networks
Lecture 43 - Thevenin and Norton's Theorems for LPTV networks
Lecture 44 - The N-path principle
Lecture 45 - N-path example
Lecture 46 - Time-domain intuition of the N-path principle
Lecture 47 - N-path example: Time-Interleaved ADCs
Lecture 48 - Dc-dc converter as an LPTV system
Lecture 49 - N-path principle: Multiphase dc-dc converter
Lecture 50 - The N-path filter
Lecture 51 - Computing H_0(j2\pi f_s) for a 4-path filter
Lecture 52 - Input impedance of the 4-path filter at f_s
Lecture 53 - Computing H_0(j2\pi 2 f_s) for a 4-path filter
Lecture 54 - Determining H_0 for input frequency deviations from f_s
Lecture 55 - Reciprocity and Inter-reciprocity in LPTV networks : Part 1
Lecture 56 - Reciprocity and Inter-reciprocity in LPTV networks : Part 2, the transfer-function theorem
Lecture 57 - Why is the transfer-function theorem important?
Lecture 58 - The frequency-reversal theorem for inter-reciprocal (adjoint) LPTV networks : introduction
Lecture 59 - The frequency-reversal theorem for inter-reciprocal (adjoint) LPTV networks : derivation
Lecture 60 - Why is the frequency-reversal theorem important?
Lecture 61 - Inter-reciprocity in signal-flow graphs
Lecture 62 - Applications of inter-reciprocity: analysis of chopped amplifiers
Lecture 63 - Applications of inter-reciprocity: analysis of chopped amplifiers (Continued...)
Lecture 64 - Applications of inter-reciprocity: chopping with square-wave modulation
Lecture 65 - Applications of inter-reciprocity: the switched-RC network
Lecture 66 - Time-domain implications of inter-reciprocity and the adjoint network
Lecture 67 - Time-domain implications of inter-reciprocity and the adjoint network : Example calculation
Lecture 68 - LPTV networks with sampled outputs: Switched capacitor circuits

Lecture 69 - LPTV networks with sampled outputs: A continuous-time delta-sigma data converter
Lecture 70 - LPTV networks with sampled outputs: The equivalent LTI filter
Lecture 71 - Finding the equivalent LTI filter of a sampled LPTV system : example
Lecture 72 - Equivalent LTI filter for a switched-RC network
Lecture 73 - Finding the equivalent LTI filter of a sampled LPTV system : example of a continuous-time delta-
Lecture 74 - Finding the equivalent LTI filter of a sampled LPTV system with offset sampling
Lecture 75 - LPTV networks driven by modulated inputs
Lecture 76 - Introduction to noise in LPTV Networks
Lecture 77 - Noise in LPTV networks with sampled outputs
Lecture 78 - Total integrated noise in networks with R,L,C and periodically operated switches