NPTEL Video Course - Electrical Engineering - NOC:Nonlinear System Analysis

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Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Supplementary lecture
Lecture 31 - Center Manifold Theorem
Lecture 32 - Interconnection between non linearity and a linear system - Sector Nonlinearities And Aizermannâ
Lecture 33 - Counter example for Aizermannâ s conjecture
Lecture 34 - Passivity inspiration - passive circuits - dissipation equality
Lecture 35 - Dissipative Equality for circuit (Continued...)
Lecture 36 - PR condition for passivity of SISO system
Lecture 37 - Examples of PR transfer functions
Lecture 38 - Relation between storage function and Lyapunov function - PR Lemma
Lecture 39 - Proof of PR Lemma
Lecture 40 - Proof (Continued...) using spectral factorization theorem
Lecture 41 - PR definition for MIMO case
Lecture 42 - PSD Storage function in PR Lemma and how to make it PD (strictly PR)
Lecture 43 - KYP Theorem
Lecture 44 - Passivity preservation under interconnection
Lecture 45 - Aizermannâ s conjecture under passivity assumption is true
Lecture 46 - Sector Nonlinearities and need for generlaizing KYP Lemma
Lecture 47 - Need for Loop transformations
Lecture 48 - Loop Transformations - Part 1
Lecture 49 - Loop Transformations - Part 2
Lecture 50 - Circle criterion for PR
Lecture 51 - Examples based on circle criterion and stability under circle transformations