

HOW TO WRITE THESES
WITH TWO LINE TITLES

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ABSTRACT

My abstract goes here

CHAPTER 1

INTRODUCTION

1.1 Basic Models

1.2 Functional Series Methods in Linear Systems using Impulse Response Generalization Algorithm

One can represent a linear system by its impulse response. Volterra developed a generalization of this representation for nonlinear systems in which the single impulse response is replaced with a series of integration kernels. This generalization of the impulse response, usually called Volterra series, can be used to approximate a wide variety of systems. For instance, Boyd and Chua in [3]¹ showed that a finite Volterra series can be used to approximate any nonlinear operator which has fading memory. This is explained. Now you will see a listing example:

1. Suppression of hepatic glucose production
2. Stimulation of hepatic glucose uptake
3. Stimulation of glucose uptake by peripheral tissues, mainly muscle

Fading memory concept can be defined as the effect of past inputs on the present output fades out when time approaches infinity [4]. In general, we can write the input-output relationship of any causal, discrete-time, time-invariant nonlinear systems by a series of generalized convolutions [2]. Now you will see a quotation example:

(This is a test for quotation environment!) In the Minimum Variance Method, the peaks are sharp. We compare the graphs where $N=512$ and $p=64$ and $N=512$ and $p=128$, it can be seen that when the order p is increased frequency [1].

¹Corresponding to references in the Bibliography.

1.2.1 Least Squares Based Identification. Block oriented nonlinear systems can be represented by an interconnection of linear dynamic and static nonlinear blocks. Well known block oriented nonlinear models are Hammerstein, Wiener, and LNL (Linear-Nonlinear-Linear) models as shown in the figure. Hammerstein (NL, Nonlinear-Linear) and Wiener (LN, Linear-Nonlinear) models are two special cases of the LNL cascade model. You can see the results.

1.2.1.1 Modified Periodogram. In the Modified Periodogram, the spectrum is smoother and noise level is a little bit less comparing to the Periodogram Method, since the data is multiplied with Hamming window. In the Bartlett Method, overlapping is not used and $K=4$. In this realization, we can see that frequency resolution has been decreased (peaks are broader). On the other hand, noise level has been also reduced. As we expected, there is a trade-off between frequency resolution and noise level. Decreasing noise level is paid off by decreasing frequency resolution. In the Blackman-Tuckey Method, both frequency resolution and noise level seems good.

1.2.1.2 Other Useful Methods. There are some other methods which are more complex for implementation. However, they will give more efficient results. The figures below illustrate the results obtained using method XYZ for a fuel metabolism process.

CHAPTER 2

SIMULATION ON REALISTIC SYSTEM

2.1 Introduction

2.2 Numerical Studies

2.3 Conclusions

CHAPTER 3

SIMULATION ON REALISTIC SYSTEM

3.1 Introduction

3.2 Numerical Studies

3.3 Conclusions

APPENDIX A
TABLE OF TRANSITION COEFFICIENTS FOR THE DESIGN OF
LINEAR-PHASE FIR FILTERS

Your Appendix will go here !

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