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Introduction

1 Signals and Systems

1.0 Introduction

- Begin our development of analysis for signals and systems
  - Introducing mathematical descriptions and representations

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2 Linear Time-Invariant Systems

2.0 Introduction

- Two properties: linearity and time-invariance
- Many physical processes posses these properties and can be modelled as **linear time-invariant (LTI) systems**
- LTI systems also posses the property of superposition
- We can characterize any LTI system’s response to a unit impulse
  - Convolution sum for discrete-time signals and convolution integral for continuous-time signals
- We then consider class of continuous- and discrete-time signals described by linear constant-coefficient DEs
- Lastly we will examine the continuous-time unit impulse function and other functions