
Kalman Filter Theory and Applications

Equation Drilldown

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Part I

The Basic Kalman Equations

Topics

Part I

The Basic Kalman Equations

Topics

- Understanding the Equations: Heuristic Introduction

Part I

The Basic Kalman Equations

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- Understanding the Equations: Heuristic Introduction
- **Equation Drilldown: Taking the Equations Apart**

Part I

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The Basic Kalman Equations

Equation Drilldown: Taking the Equations Apart

Subtopics

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Subtopics

- **Mathematical Formulation of the Problem**

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Equation Drilldown: Taking the Equations Apart

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- **Mathematical Formulation of the Problem**
- Drilldown on State Dynamics and Covariance Extrapolation Equations

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- **Mathematical Formulation of the Problem**
- Drilldown on State Dynamics and Covariance Extrapolation Equations
- The Five Kalman Filter Equations

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Equation Drilldown: Taking the Equations Apart

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- **Mathematical Formulation of the Problem**
- Drilldown on State Dynamics and Covariance Extrapolation Equations
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- Exercises

The Basic Kalman Equations

Equation Drilldown: Taking the Equations Apart

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- **Mathematical Formulation of the Problem**
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Mathematical Formulation of the Problem

Kalman Filter Problem Summary

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- Given two models:

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Mathematical Formulation of the Problem

Kalman Filter Problem Summary

General, Non-Linear, Time-Invariant, Discrete-Time Formulation

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 - Φ be used to predict change in estimation uncertainty over time
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