

Contents

1. Introduction
 - 1.1 Ito Stochastic Calculus
 - 1.2 Differential Equations for the Mean and Covariance of a State Vector
2. Statistical Linearization of a Nonlinear System
 - 2.1 Statistical Linearization of a Multiplicative Nonlinearity
3. Application of Nonlinear Filtering to Guidance
4. Noise-Adaptive-Bandwidth Filter
5. Application of a Noise-Dependent Filter to Missile Guidance
 - 5.1 Optimization of the Guidance Loop with Respect to Maximum Hit-Probability
6. Discussion of the Results
 - 6.1 Simulation of the Modified Nonlinear Filter
7. Appendix 1
 - 7.1 Appendix 2
8. References