TITLE

ABSTRACT

IEEE KEYWORDS

1. INTRODUCTION
   1. Intermediate depths of coastal ocean, waves felt (200m isobath)
   2. Robotic observations hindered by disturbances
2. BACKGROUND
   1. Waves
      1. LWT states that… superposition of sinusoids (a, T, Φ)
      2. Particles in water column…
      3. Fourier (a, T, Φ) of raw data
   2. MPC
      1. Basics… Model, Prediction Horizon, Cost Function
      2. Cost Function, Jacobian, minimize u input
3. SYSTEM DYNAMICS
   1. Vehicle intro (thrusters, added mass, solidworks, AQWA, Drag, etc)
      1. Table of parameters
   2. Force Balance, w/ added mass, drag
   3. State Space Form
4. SIMULATOR
   1. Wave Field inputted as system of (a, T, Φ)
   2. Algorithm Layout
      1. In figure
5. RESULTS
   1. Determination of Best Horizon w/ Σ errors compared to calc time
   2. Compare MPC with standard PD, driftwood
   3. Optimal horizon tested against noisy world
      1. Gaussian noise to either (a, T, Φ) with trained input vector
6. CONCLUSION
   1. Future Work

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REFERENCES