Literature Review Outline

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1. Satellite and Space Station Servicing
   1. NASA On-Orbit Satellite Servicing Study from 2010
   2. Planned and Completed Missions
      1. NASA’s OSAM-1
      2. Northrop Grumman’s MEV
   3. Space Station Assembly and Maintenance
      1. International Space Station
      2. Tiangong Space Station
2. Model-Based Systems Engineering Methodologies
   1. INCOSE / Generally / JPL Extended State / Fault Detection (like Alex’ Lit Review)
      1. [5], [6] from Alex’ Lit Review look like good sources
   2. Horizon Simulation Framework
      1. Morgan’s Thesis for overview
      2. Various HSF theses implementations
3. Model-Based Systems Engineering for Small Spacecraft / Servicing Spacecraft
   1. Have not really found truly an MBSE for servicing spacecraft yet… have found lots for modelling the dynamics/control, which is closer to what I am really doing... but literature exists for smallsats/cubesats, as seen in Alex’ thesis
4. Modelling and Simulation of Spacecraft Dynamics
   1. Generally… from the following papers:
      1. “​​Control-oriented modelling and simulation of spacecraft attitude and orbit dynamics”
      2. “A modelling and simulation system of space robot for capturing non cooperative target”
   2. Linearized Equations for Relative Motion [original HCW Paper]
   3. Formation Flight Modelling/Sim (Possibly will include)
      1. Cooperative Control (Possibly will include)
   4. Spacecraft Attitude Dynamics and Control
      1. VSCMG Paper (from 560)
      2. Thruster Allocation Paper (from 560)
      3. Survey of Attitude Control Laws: FSFB, PID, etc (Likely will include)
5. Optimal Control Theory and Optimal Spacecraft Trajectories in the Relative Frame
   1. Optimal Control Theory more generally
      1. Problem Formulation: Costs & Constraints (Possibly will include)
      2. LQR (Likely will include)
      3. Cooperative Control (Likely will include)
      4. MPC (Possibly will include)
   2. Optimal Transfers in the Relative Frame
      1. Have found lots of papers on the topic of optimal trajectories for rendezvous, many go far beyond the scope of what I am looking to implement… some narrow in to the CW equations, impulsive transfers