Matlab/Simulink Crazyflie Guide

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# Scope

* Show the guiding principles and equations behind the Simulink files
* Show how to use the simulation
* Show how to modify the simulation
* Keep Will Graham sane as he tries to have some direction on building this thing
* How to use this
  + Things are cross referenced, so ctrl+click to follow hyperlinks to specific index places.

# Variable Descriptions and How They’re Used

* The information below is taken from Teppo Luukkonen’s Paper Modelling and Control of Quadcopter
* Notes on what to remember
  + ***ξ*** = zeta
    - Double derivatives are important, as they correspond to acceleration of the Crazyflie in terms of the body frame
    - This is how we’ll make sure the robot moves from left to right
    - This will be a vector of x, y, z respectively
  + ***η*** = eta
    - Angular acceleration of the Crazyflie. Think orientation is space (if its upside down, its hard to control).
    - This will be a vector of roll, pitch, and yaw (see index screenshots (**Teppo Luukkonen Paper Screenshots** below for more description on these variables if necessary).
  + **I** = Inertia matrix
    - How the thing turns

# Governing Differential Equations

Notation:

# Constants

Inertia Matrix

# Index

## Teppo Luukkonen Paper Screenshots

Diagram

Description automatically generated

Text, letter

Description automatically generated