

Fault Tolerant Control and Trajectory Planning for Quadrotor UAV

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Guided By:

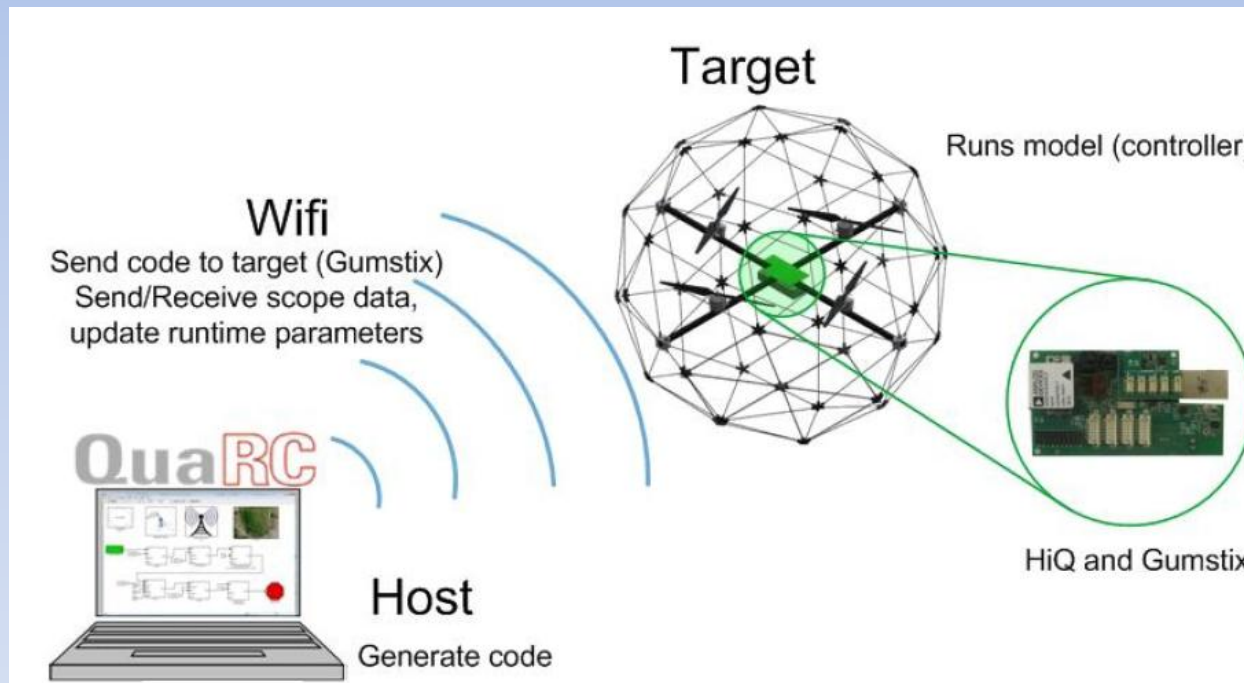
Dr. Youmin Zhang

December 20, 2010

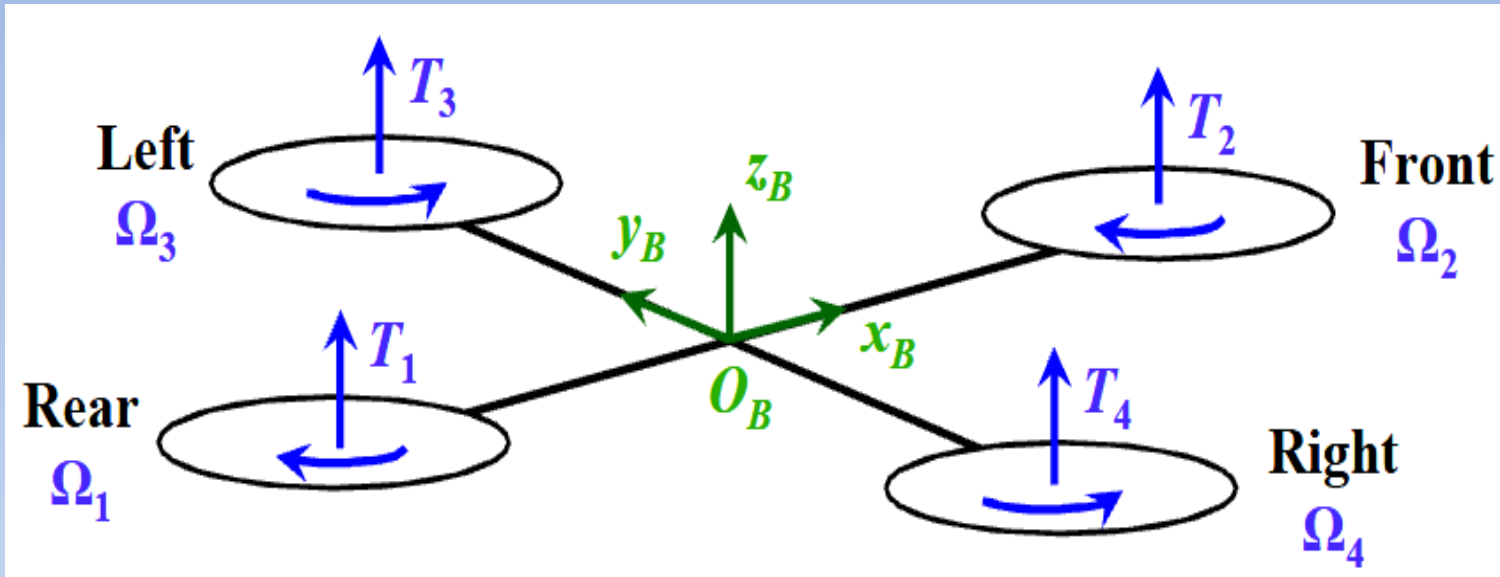
Quadrotor QBall



Communication Hierarchy



PROPELLERS



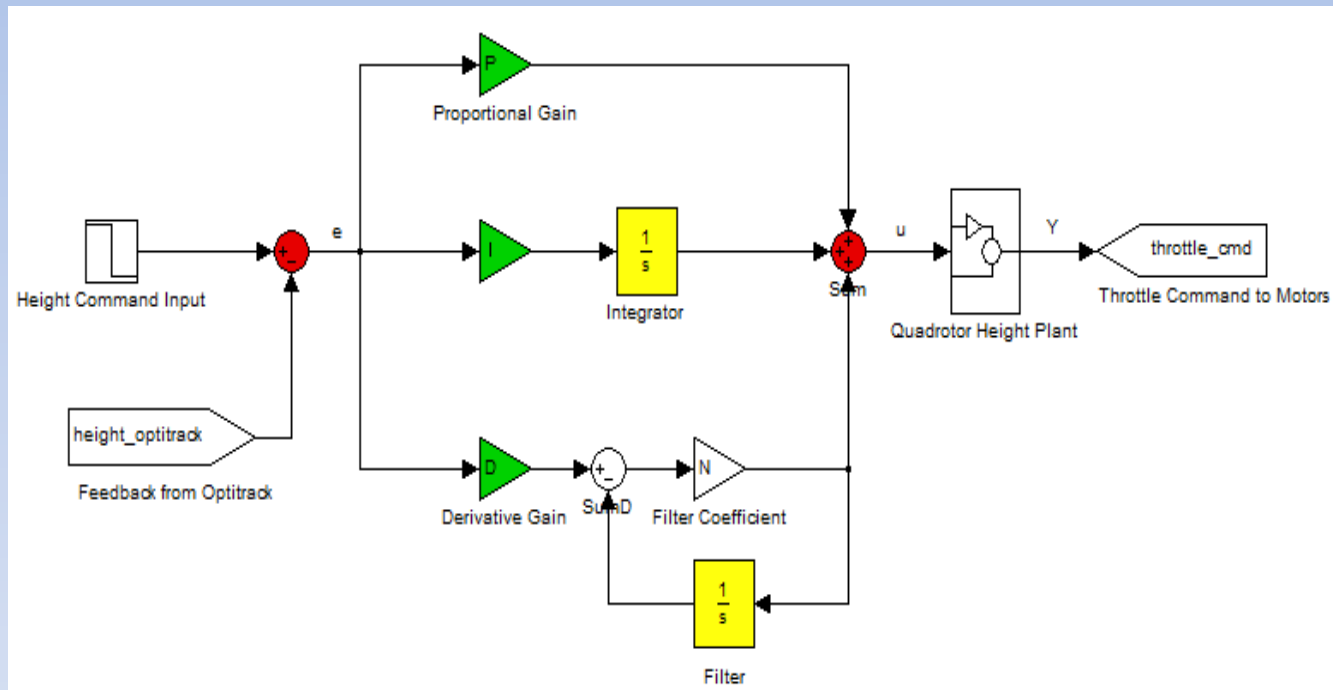
Throttle – All four propellers

Roll – Left & Right

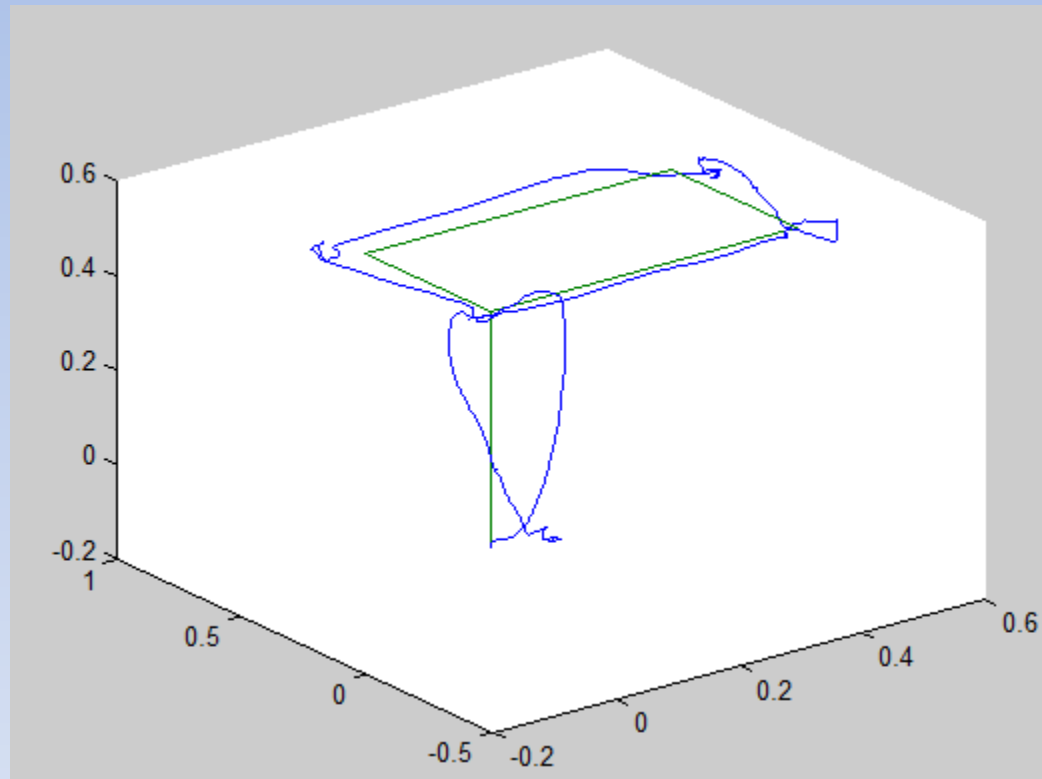
Pitch – Front & Rear

Yaw – Increasing (or decreasing) the front-rear propeller speed and decreasing (or increasing) left-right propeller speed

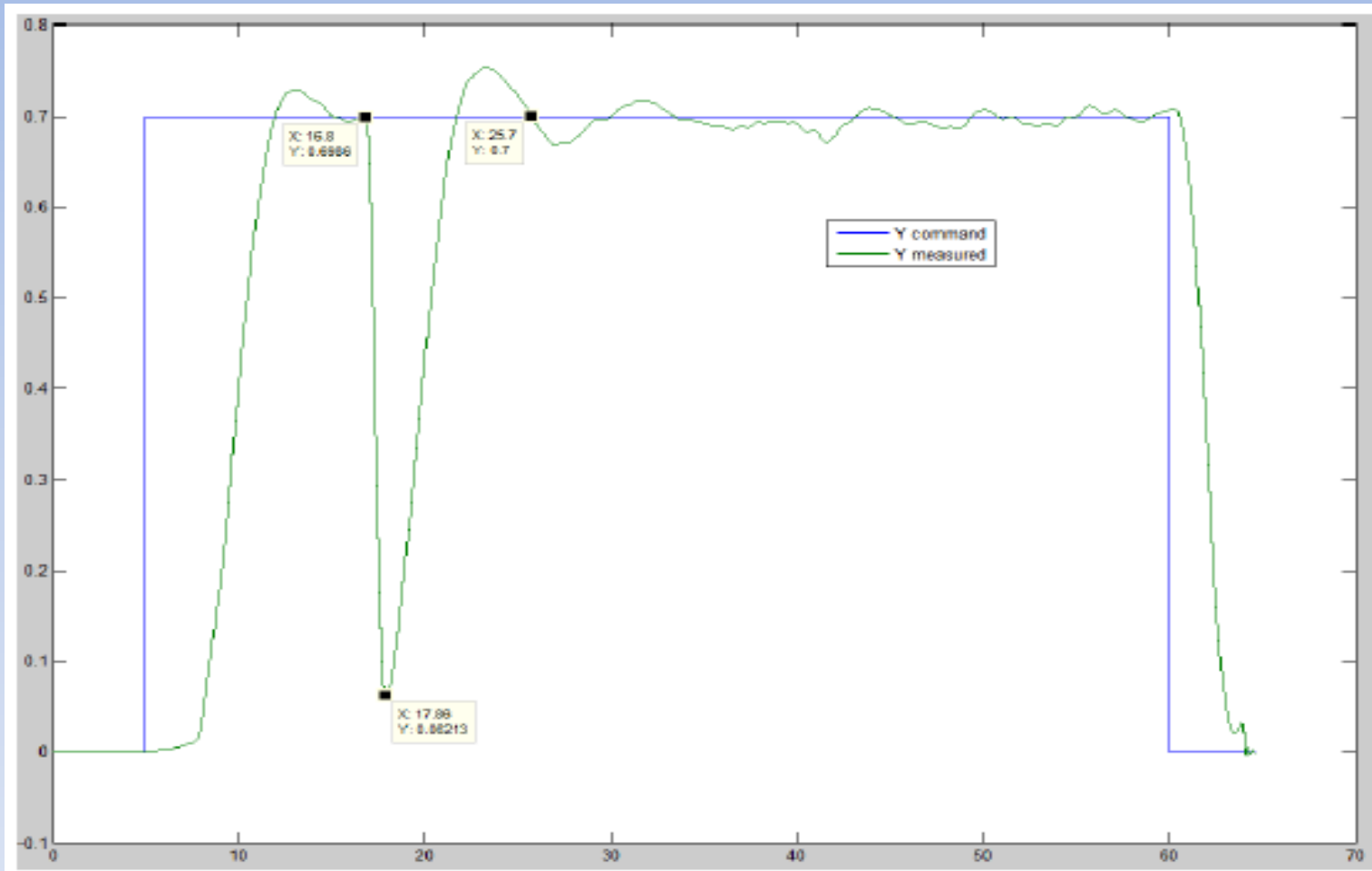
Height Controller



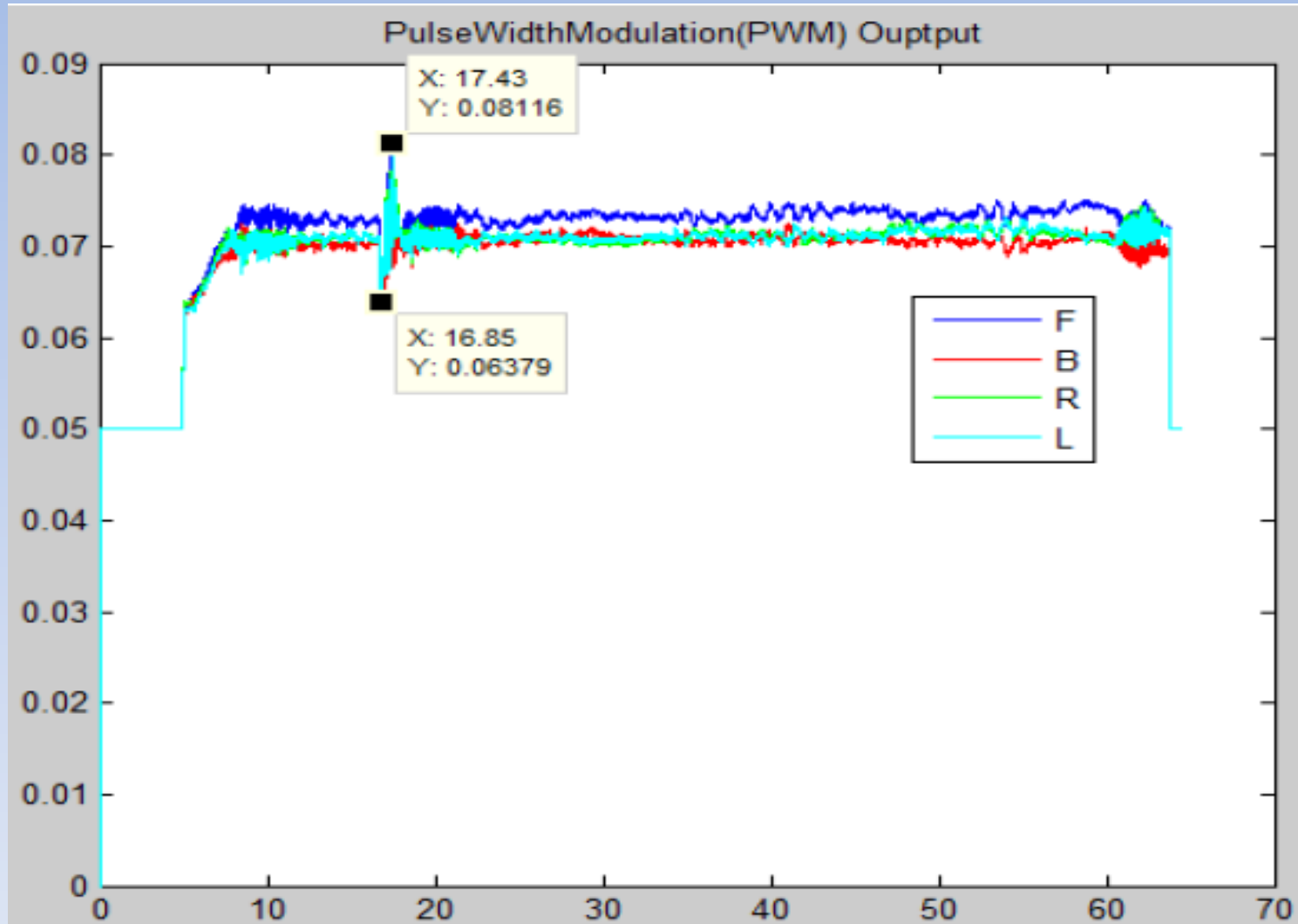
Trajectory



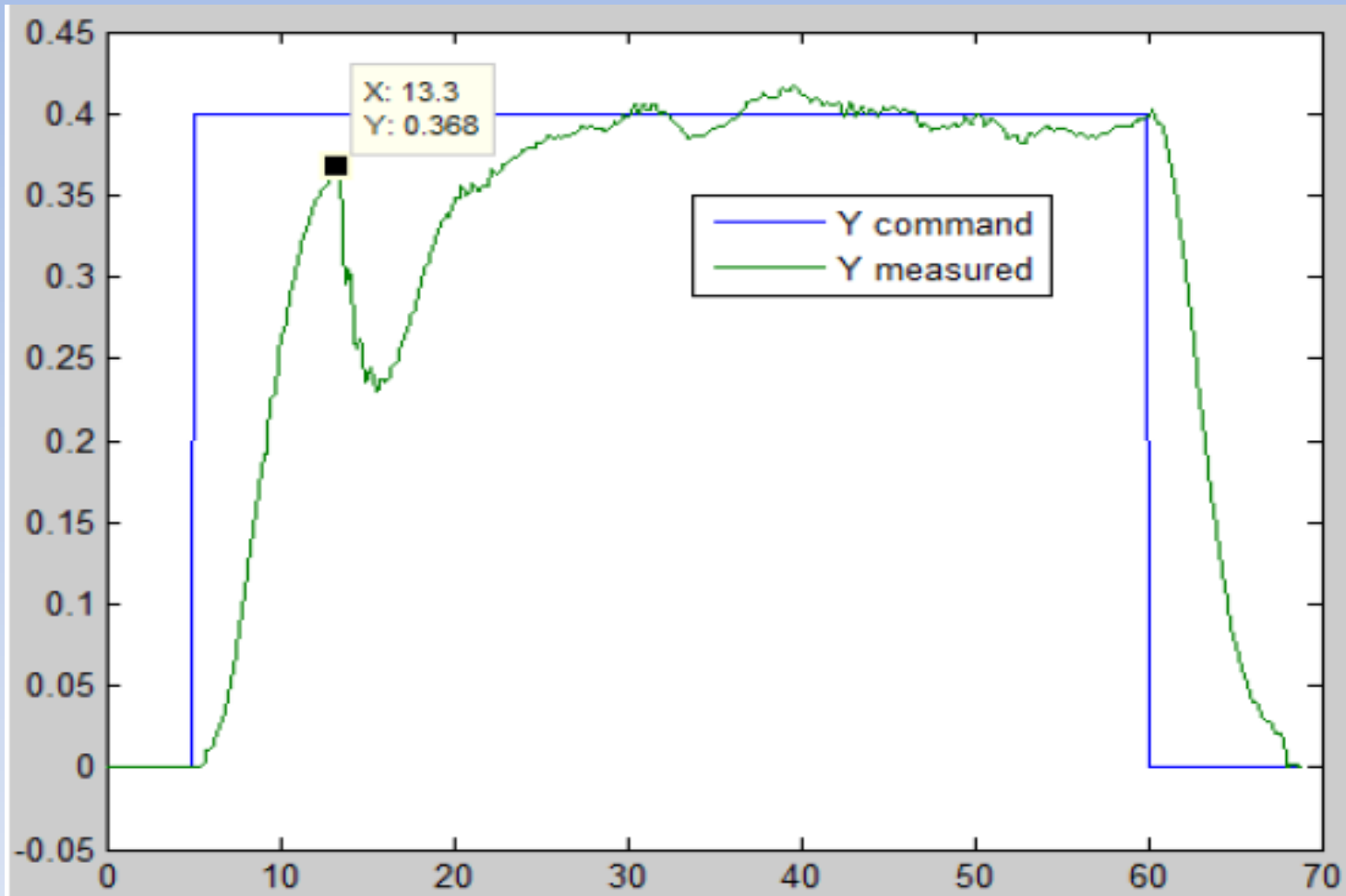
Height Control with fault



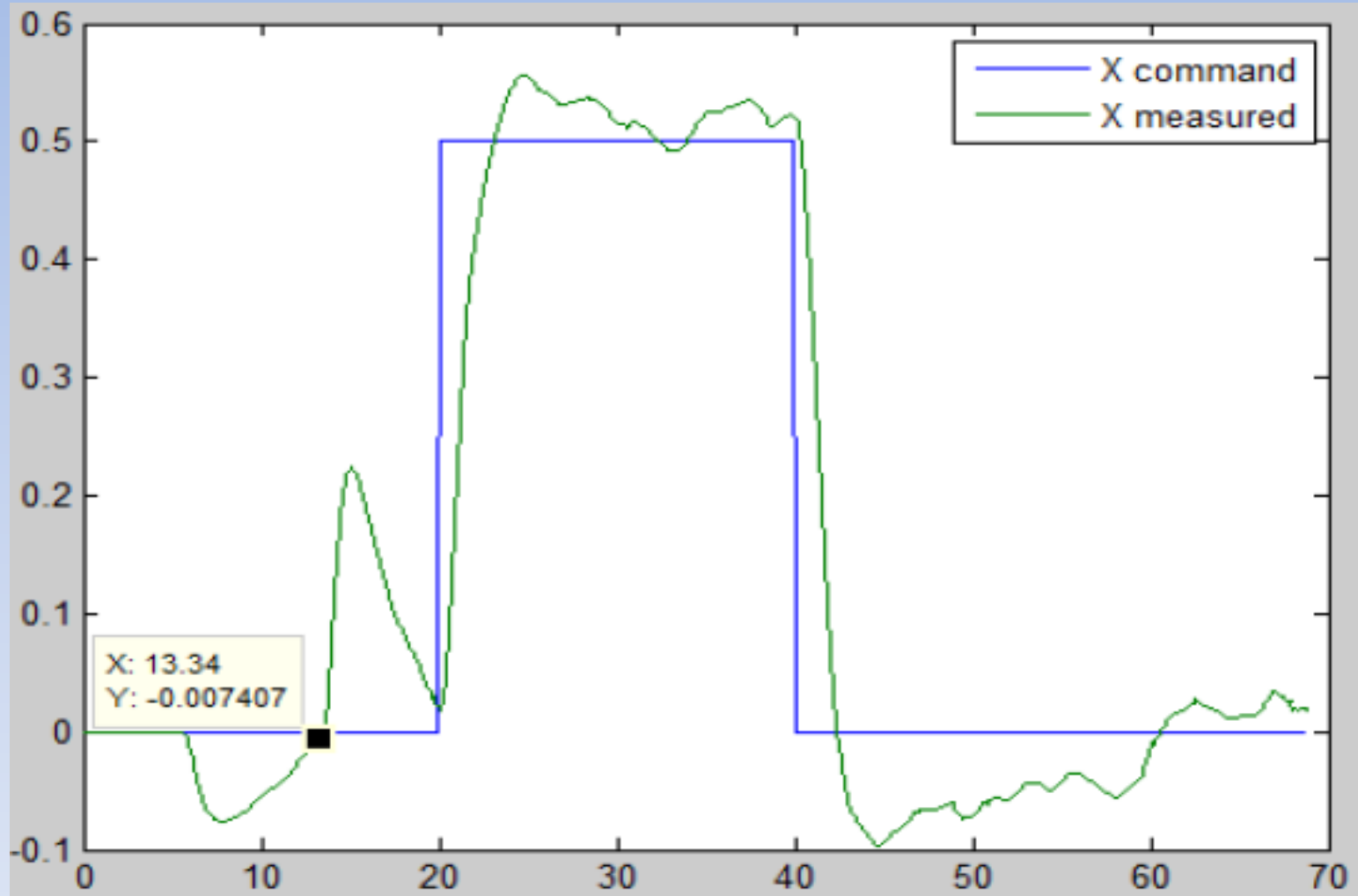
Height Control with fault



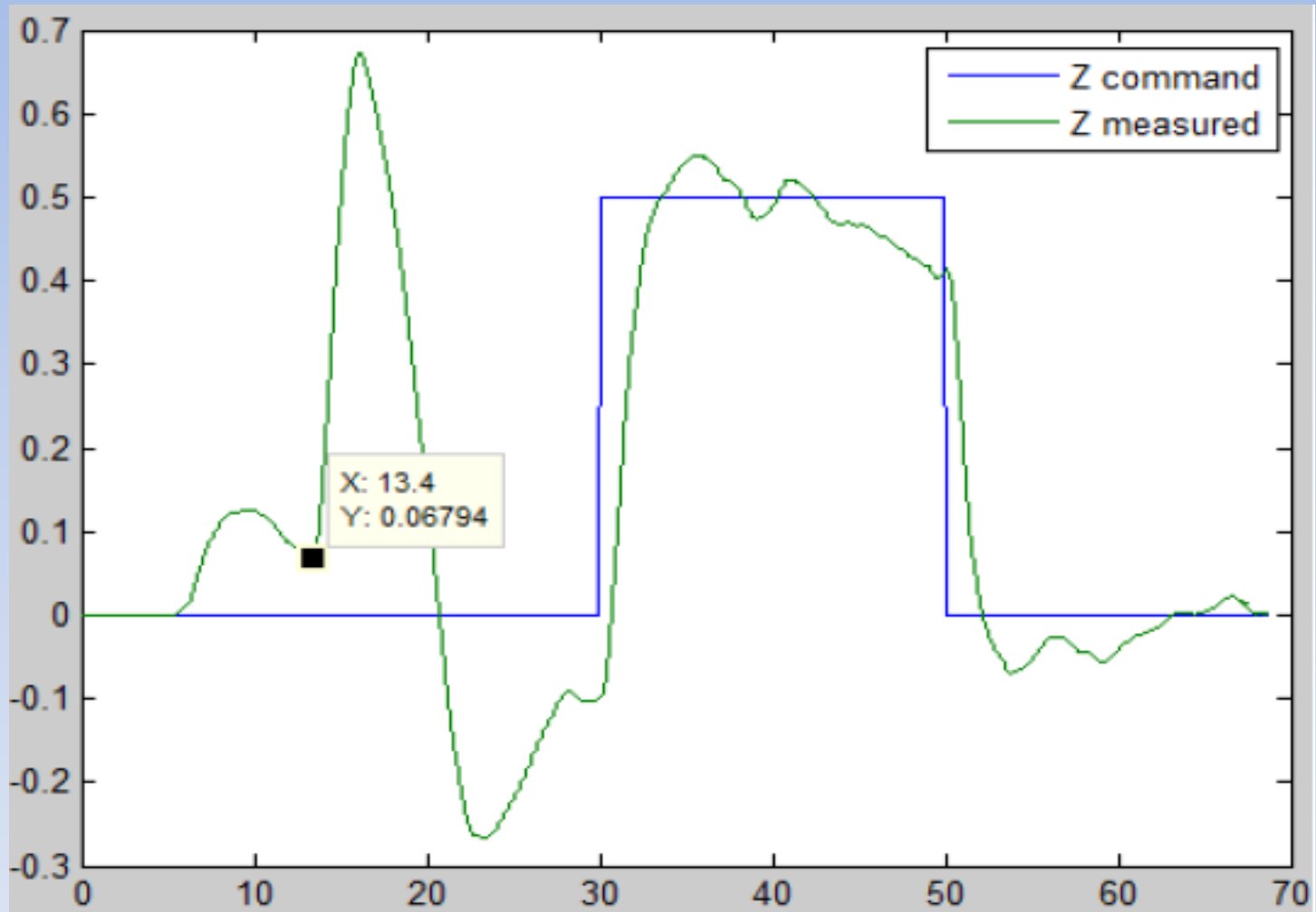
Trajectory Tracking with fault



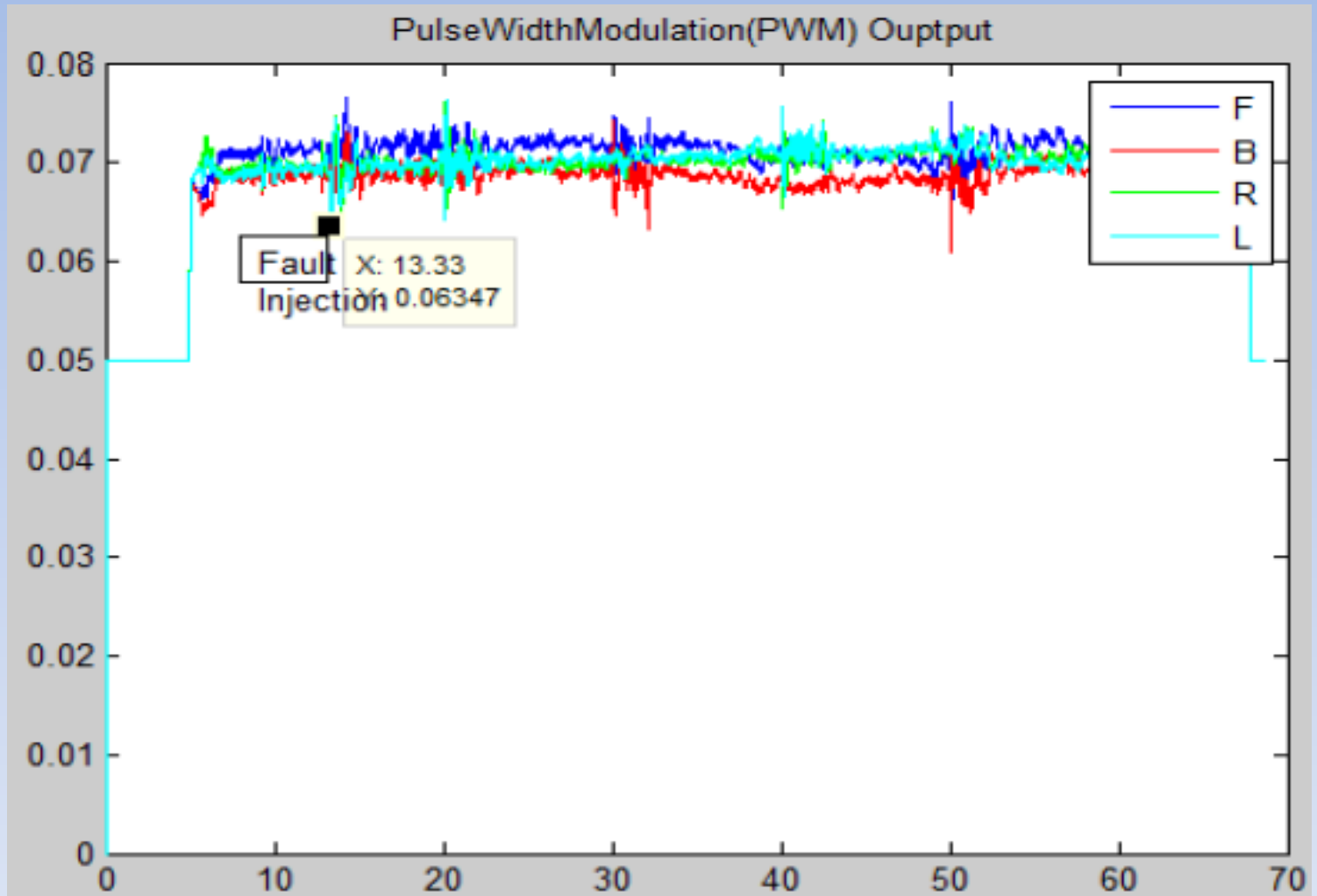
Trajectory Tracking with fault



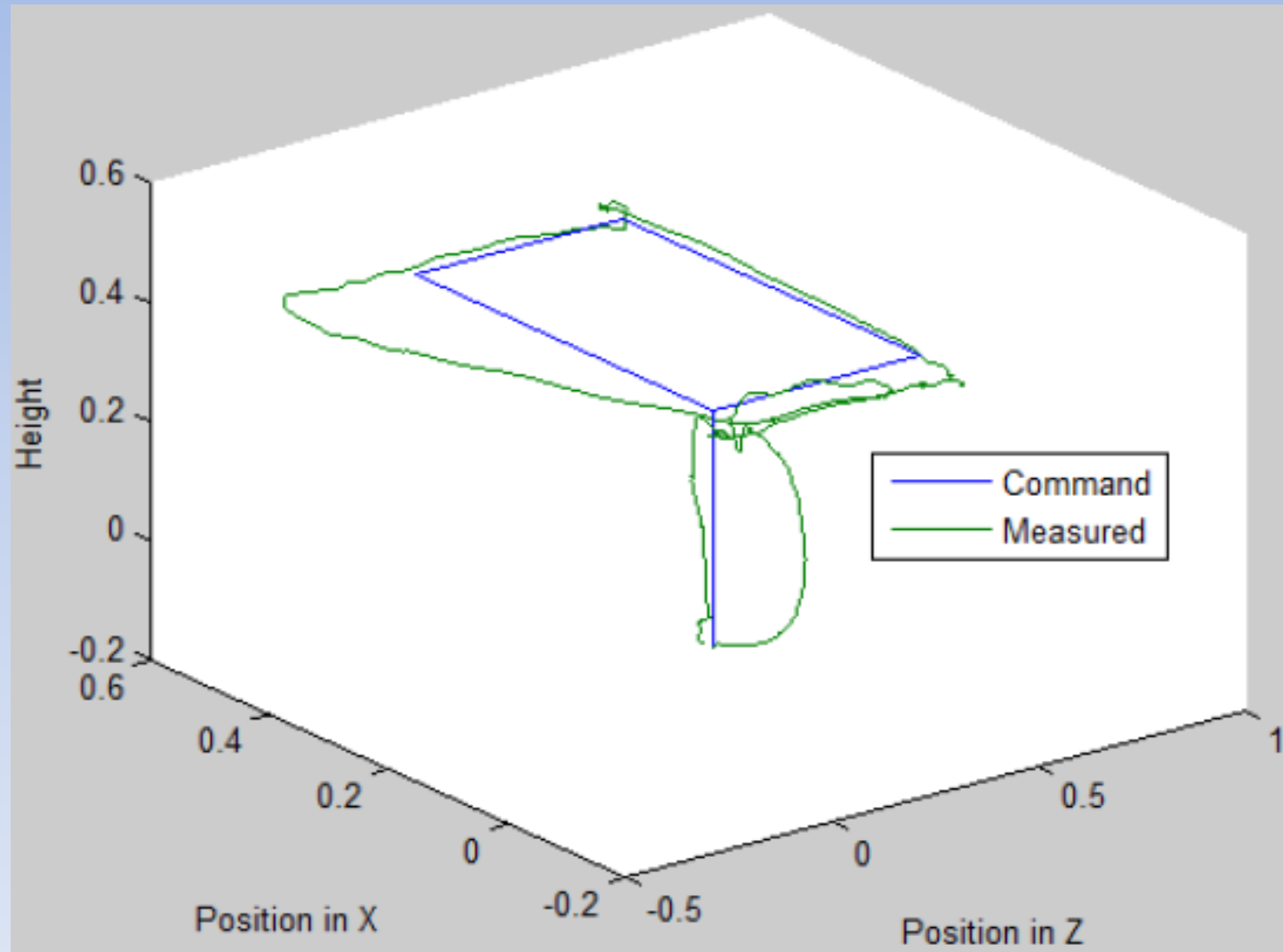
Trajectory Tracking with fault



Trajectory Tracking with fault



Trajectory Tracking with fault





Thank
you



Stockphoto