

FOC Test Report: demo_trapezoidal_profile

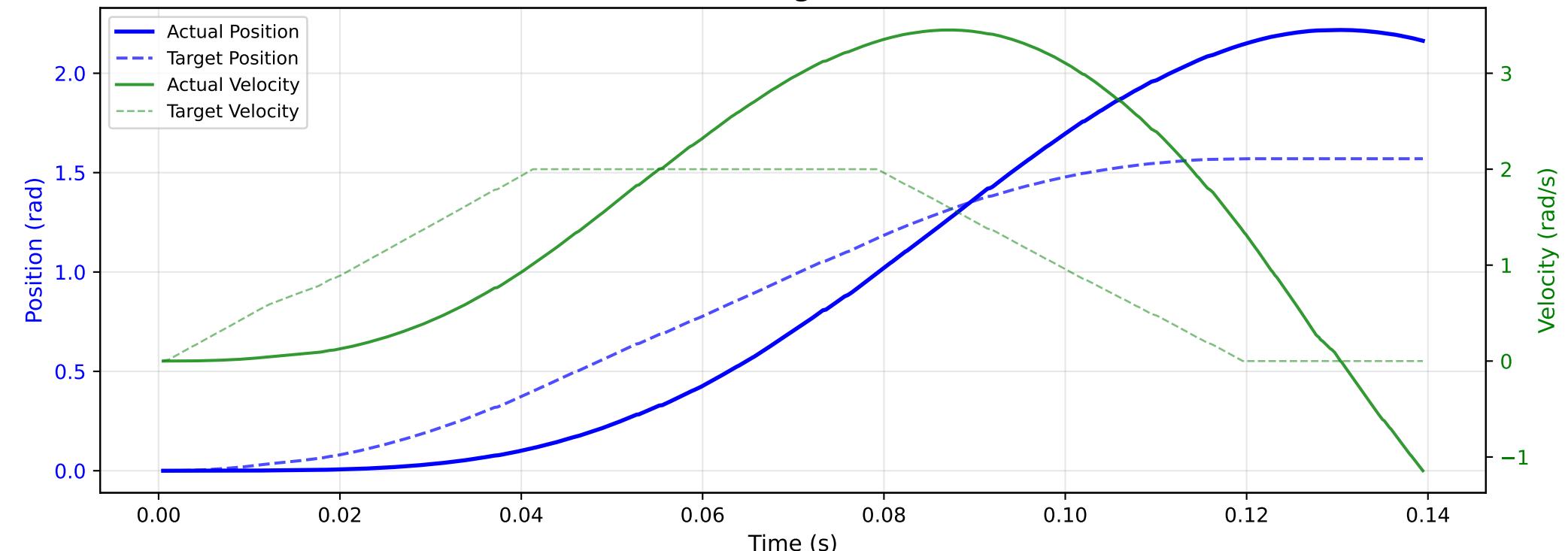
Test Name: demo_trapezoidal_profile
Platform: Renode STM32G431CB
Firmware: iRPC v2.0
Start Time: 2025-10-07 21:26:47

Samples Collected: 1385
Test Duration: 0.139 s

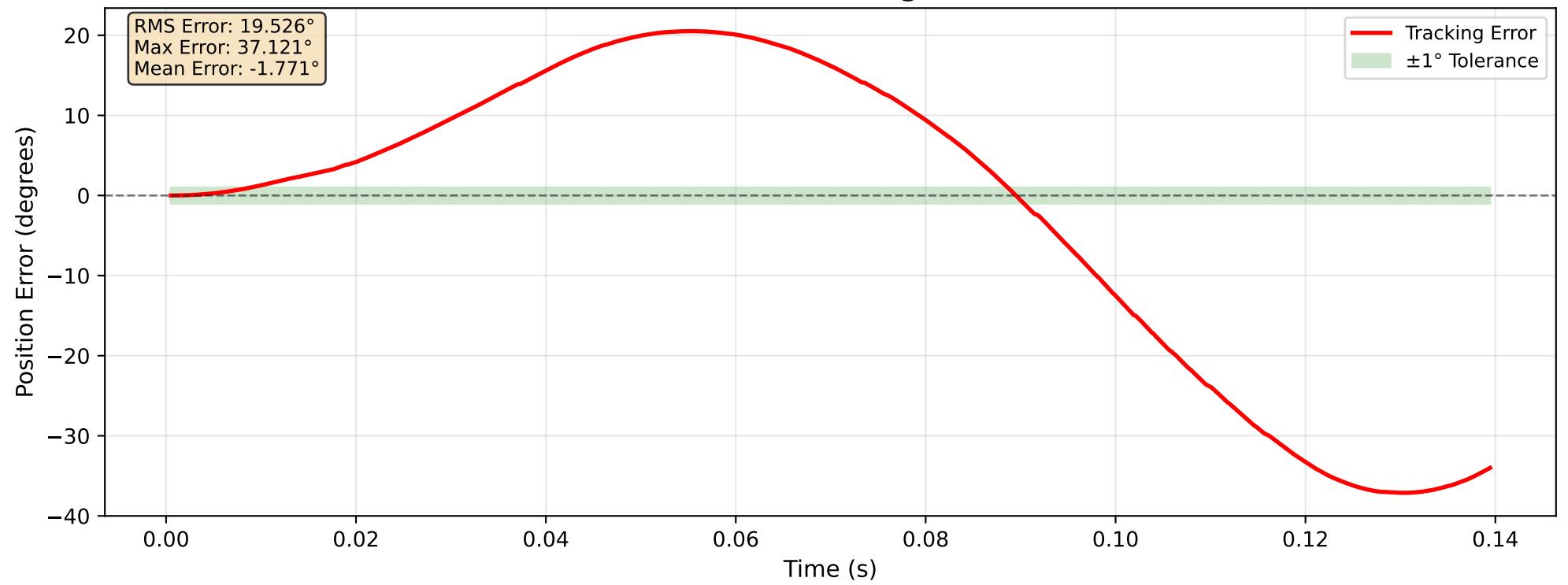
Performance Summary:

Position Range: [0.000, 2.218] rad
Position Std Dev: 0.850 rad
Max Velocity: 3.451 rad/s
Peak Current (I_q): 1.30 A
Mean Current (I_q): -0.00 A

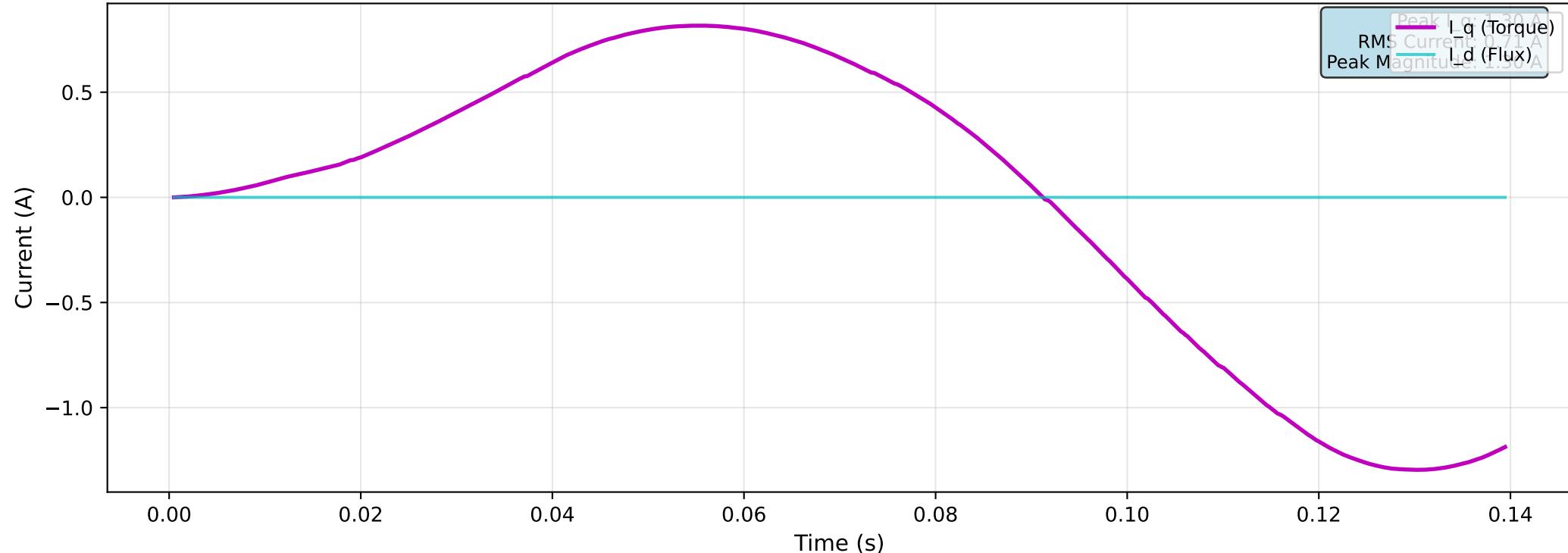
Motion Tracking Performance



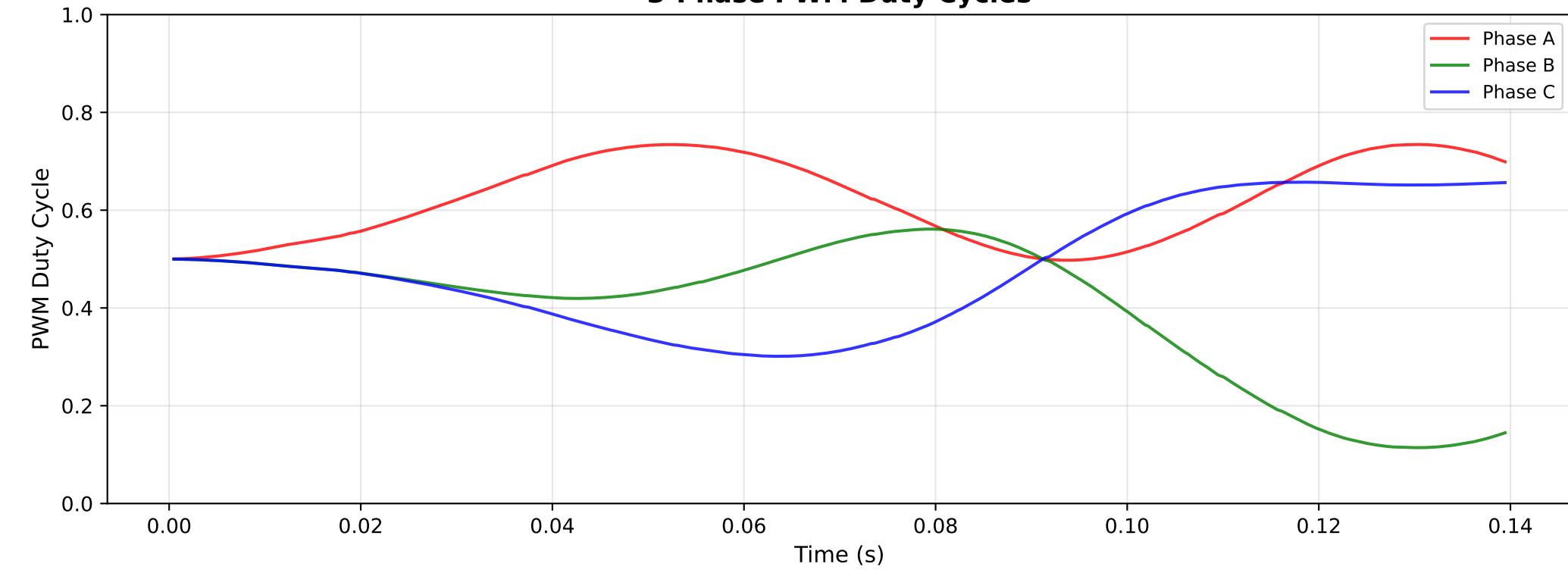
Position Tracking Error



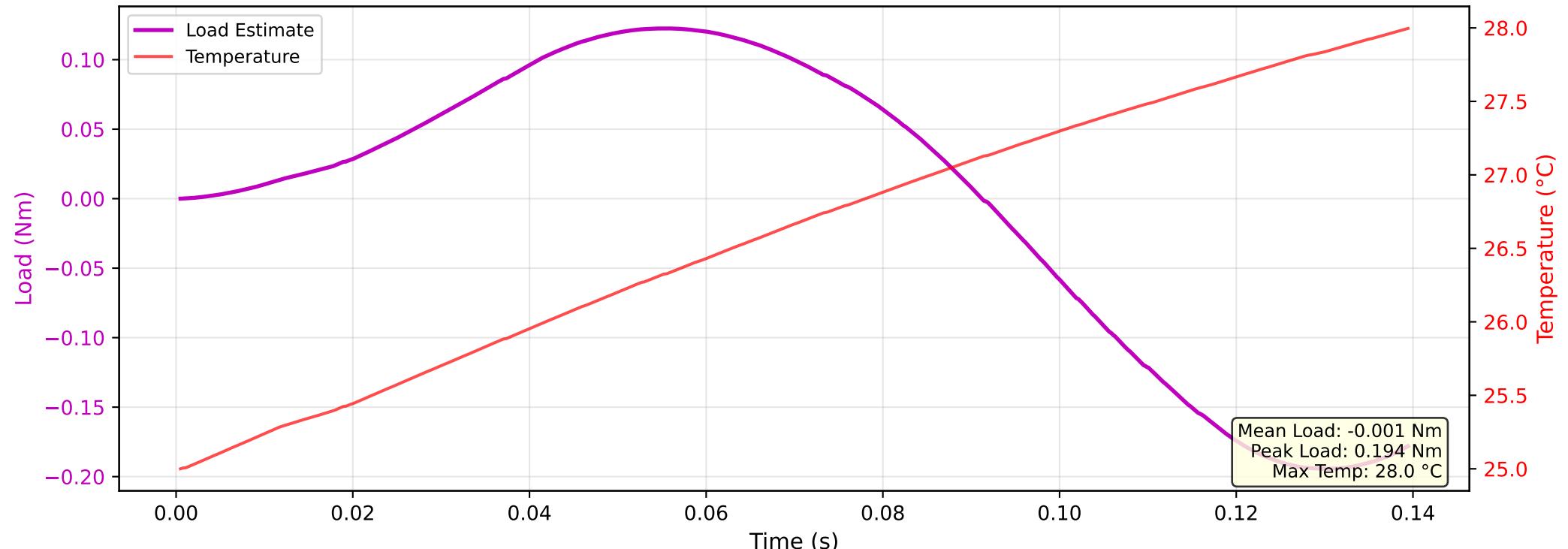
FOC d-q Axis Currents



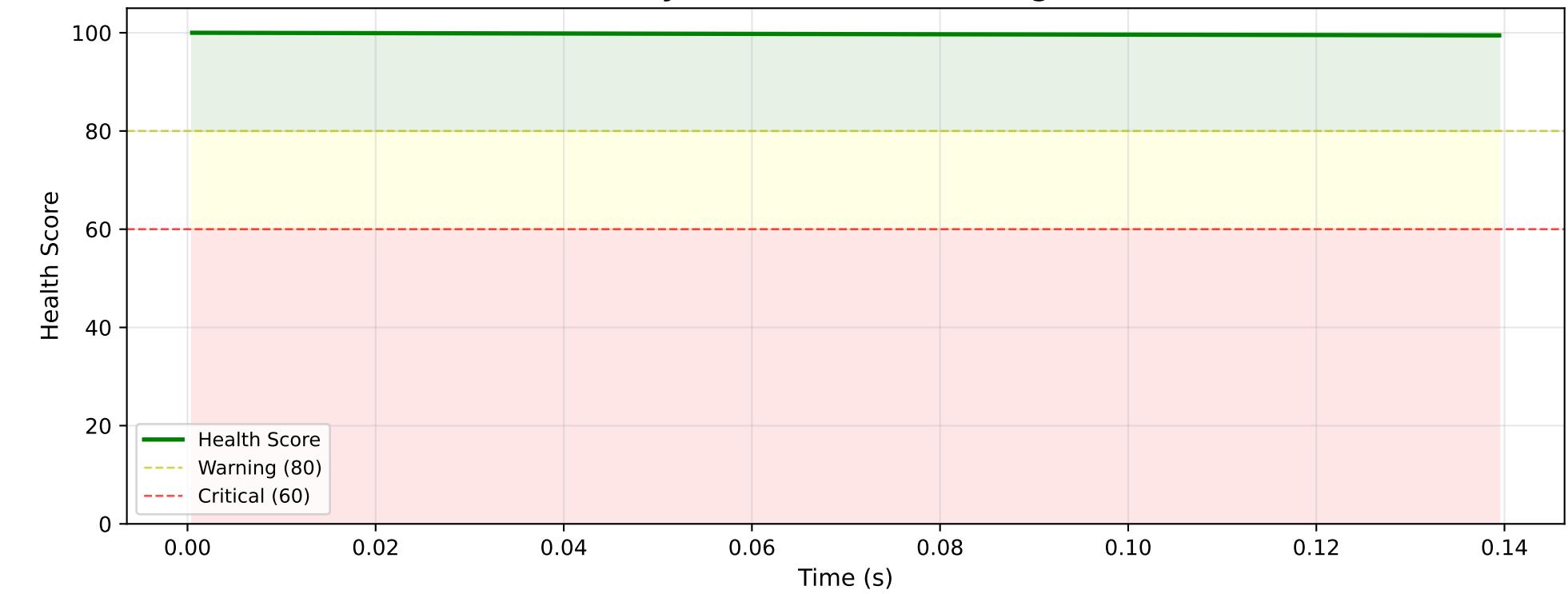
3-Phase PWM Duty Cycles



Load Estimation & Temperature



System Health Monitoring



Phase Diagram (Position-Velocity)

