

FOC Test Report: demo_adaptive_load_step

Test Name: demo_adaptive_load_step

Platform: Renode STM32G431CB

Firmware: iRPC v2.0

Start Time: 2025-10-07 21:26:47

Samples Collected: 600

Test Duration: 0.054 s

Performance Summary:

Position Range: [0.000, 1.410] rad

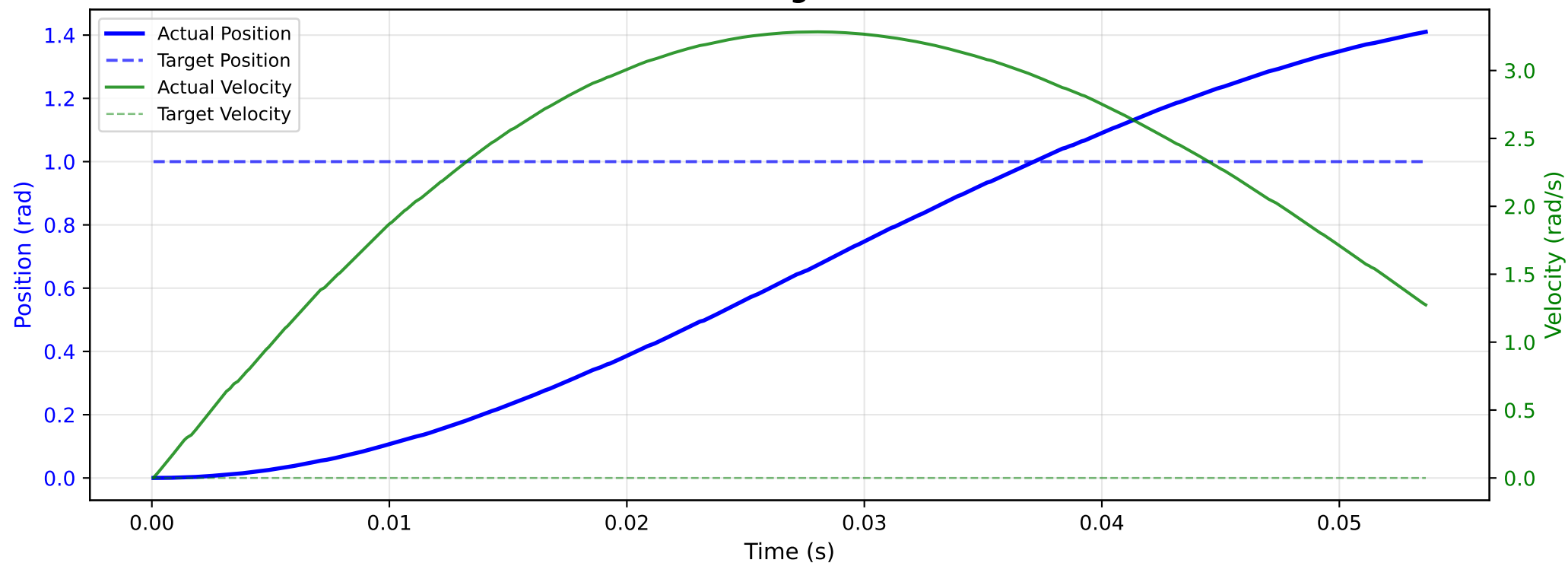
Position Std Dev: 0.472 rad

Max Velocity: 3.285 rad/s

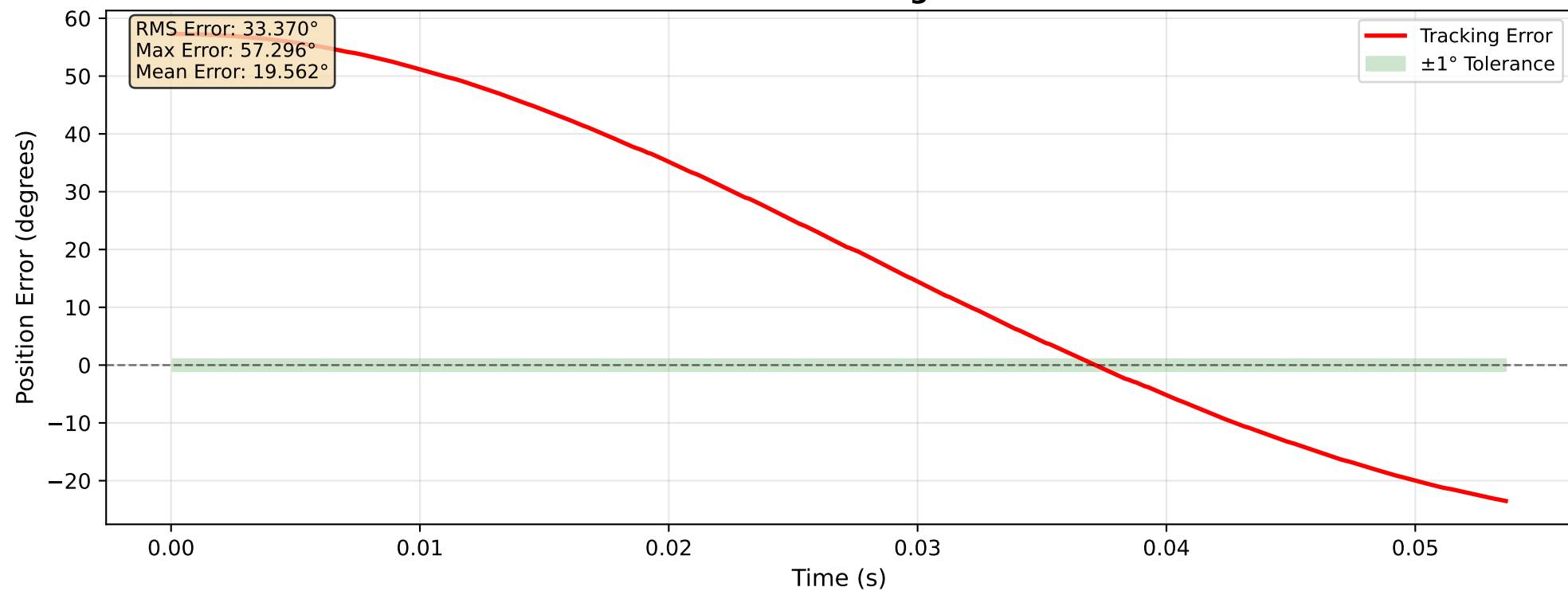
Peak Current (I_q): 2.90 A

Mean Current (I_q): 0.97 A

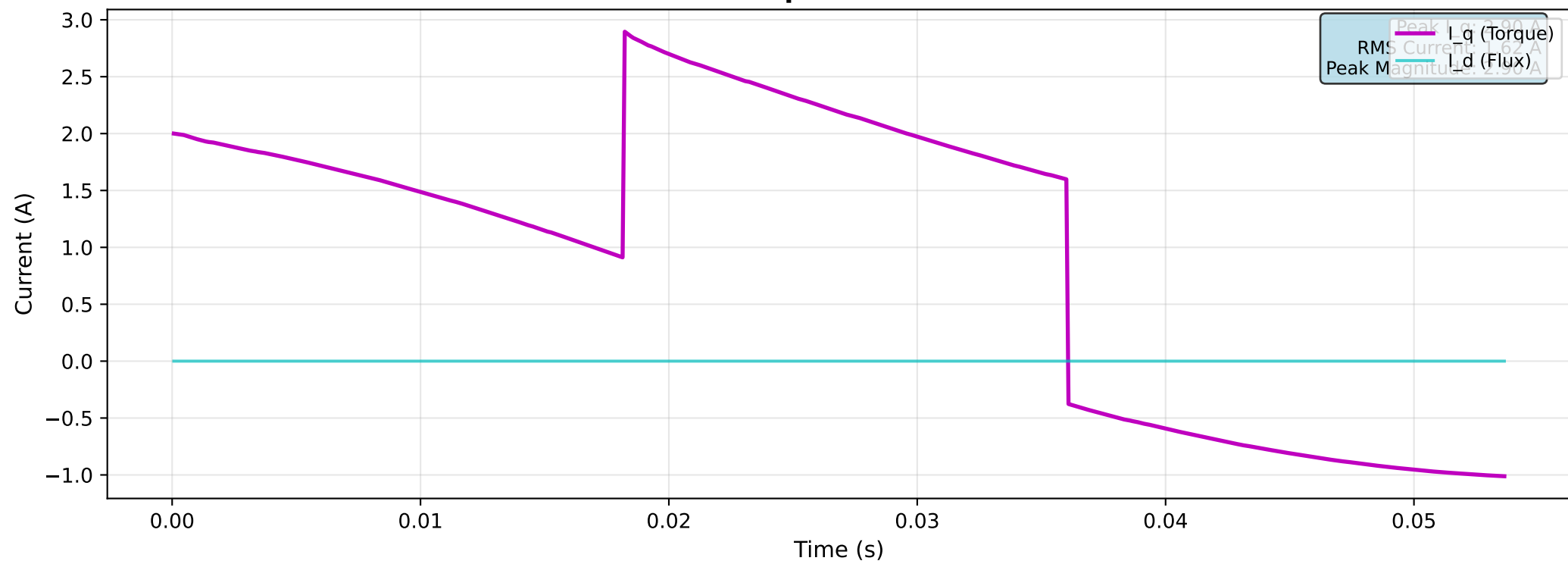
Motion Tracking Performance



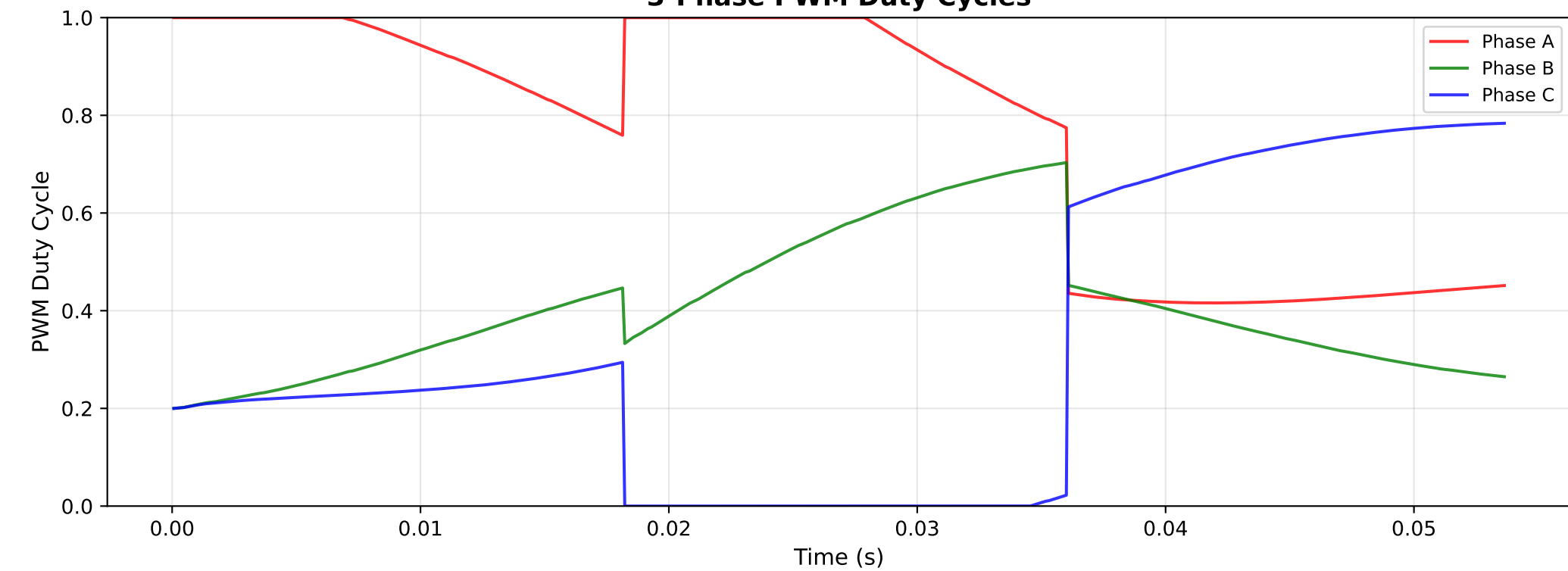
Position Tracking Error



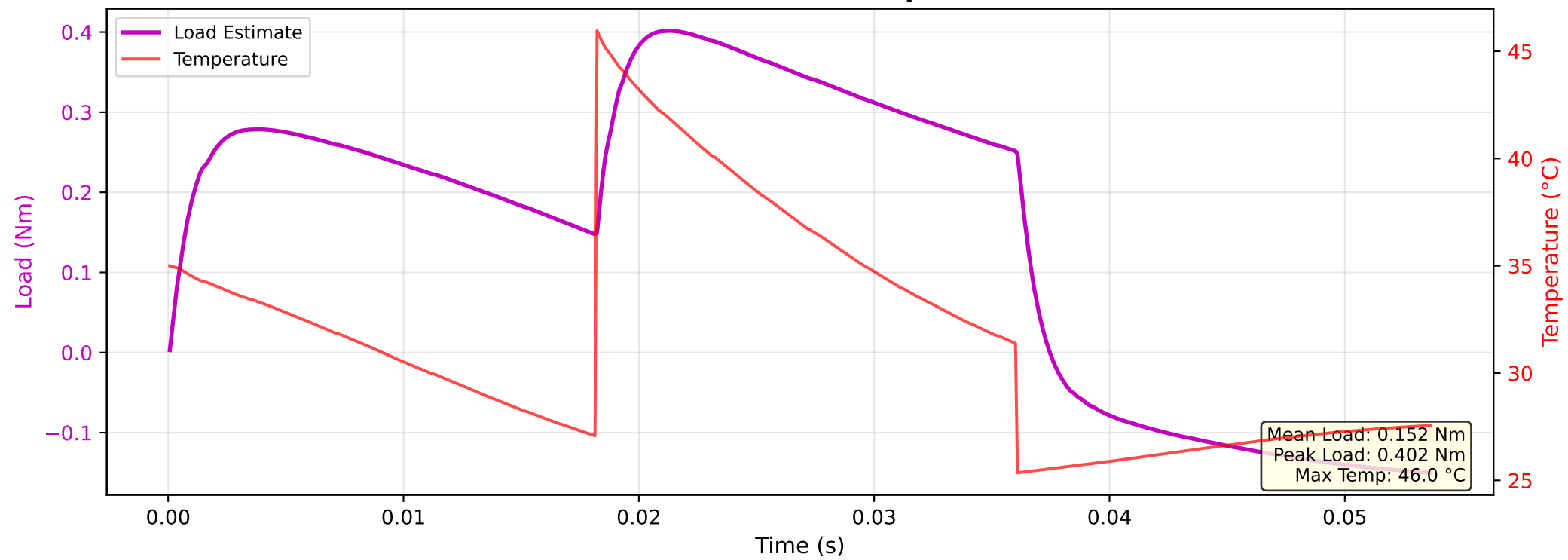
FOC d-q Axis Currents



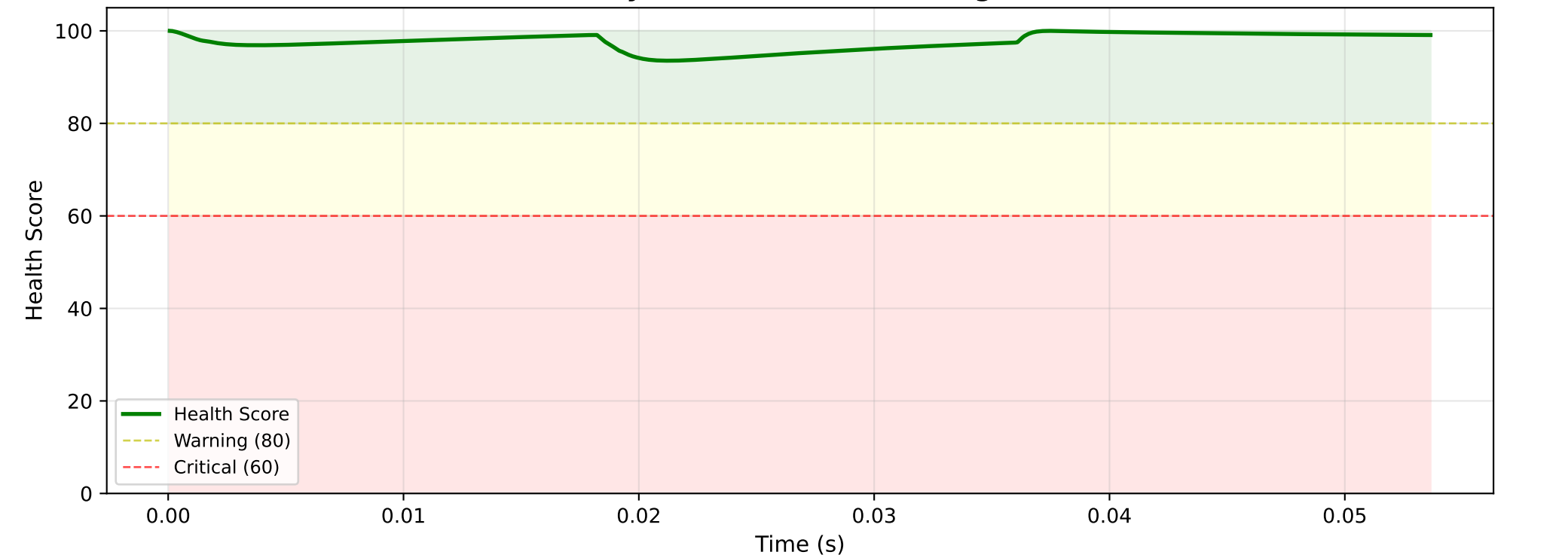
3-Phase PWM Duty Cycles



Load Estimation & Temperature



System Health Monitoring



Phase Diagram (Position-Velocity)

