

FOC Test Report: demo_adaptive_load_step

Test Name: demo_adaptive_load_step

Platform: Renode STM32G431CB

Firmware: iRPC v2.0

Start Time: 2025-10-10 22:00:27

Samples Collected: 600

Test Duration: 0.101 s

Performance Summary:

Position Range: [-136.493, 0.000] rad

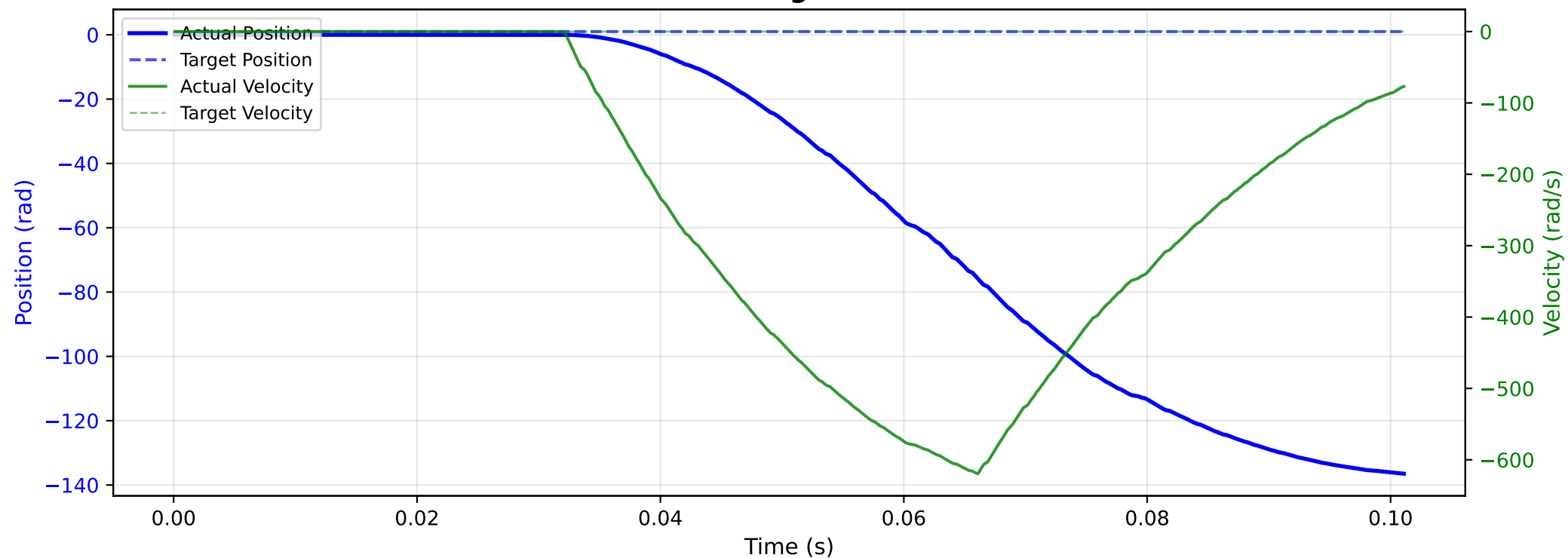
Position Std Dev: 51.799 rad

Max Velocity: 0.006 rad/s

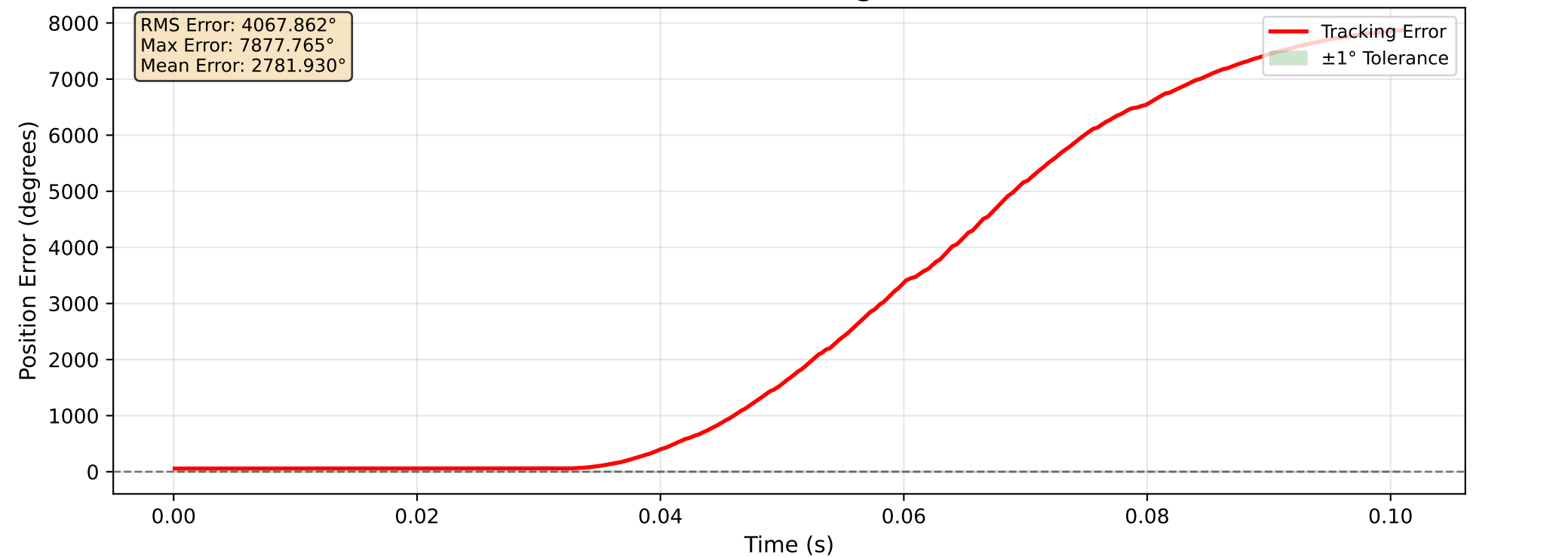
Peak Current (I_q): 0.40 A

Mean Current (I_q): 0.18 A

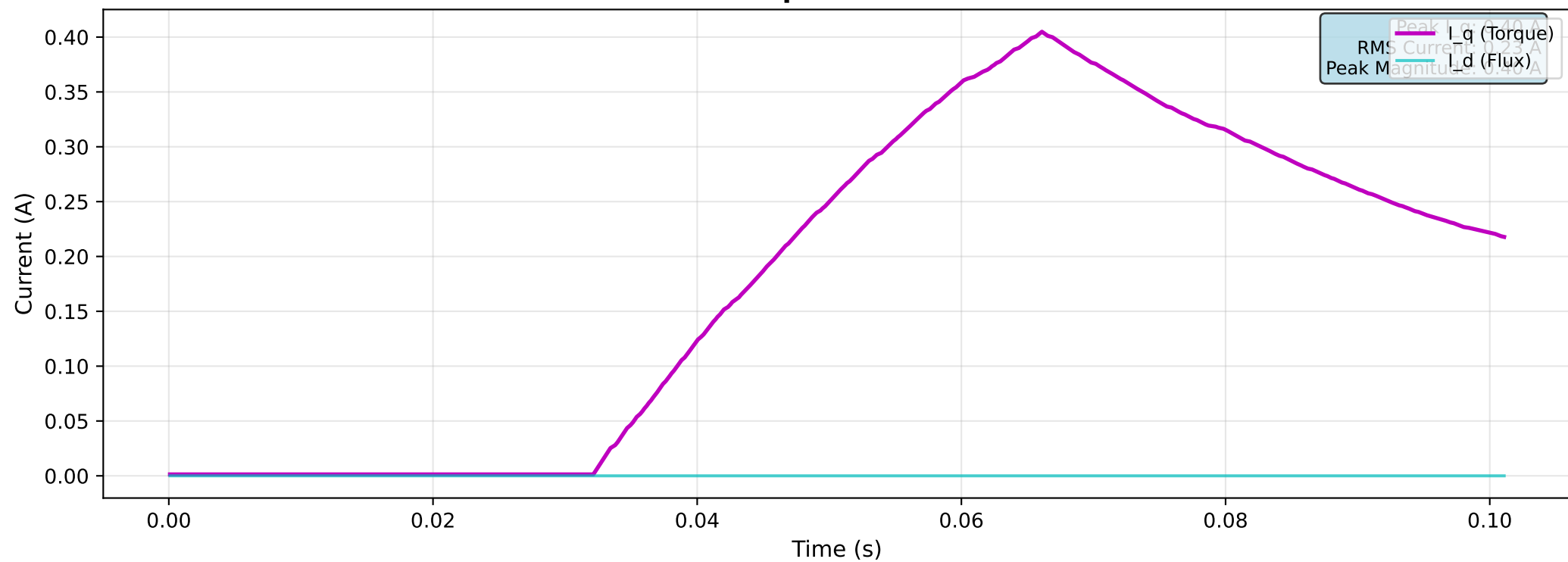
Motion Tracking Performance



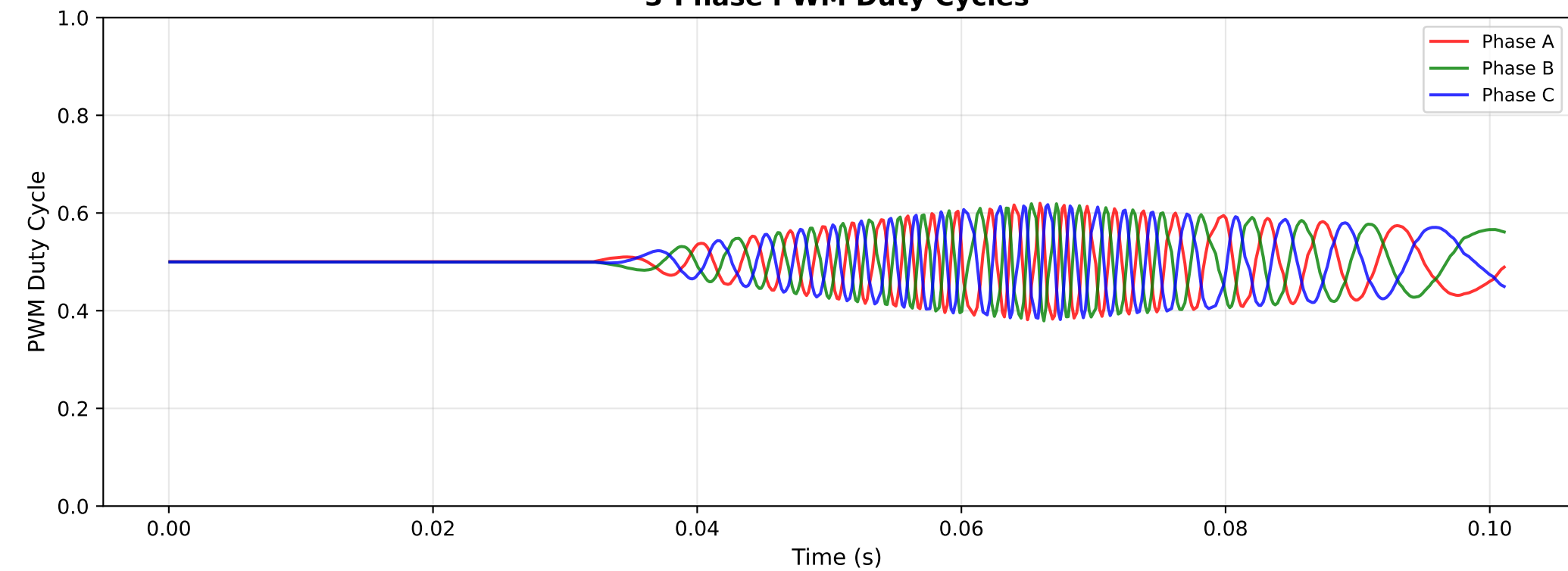
Position Tracking Error



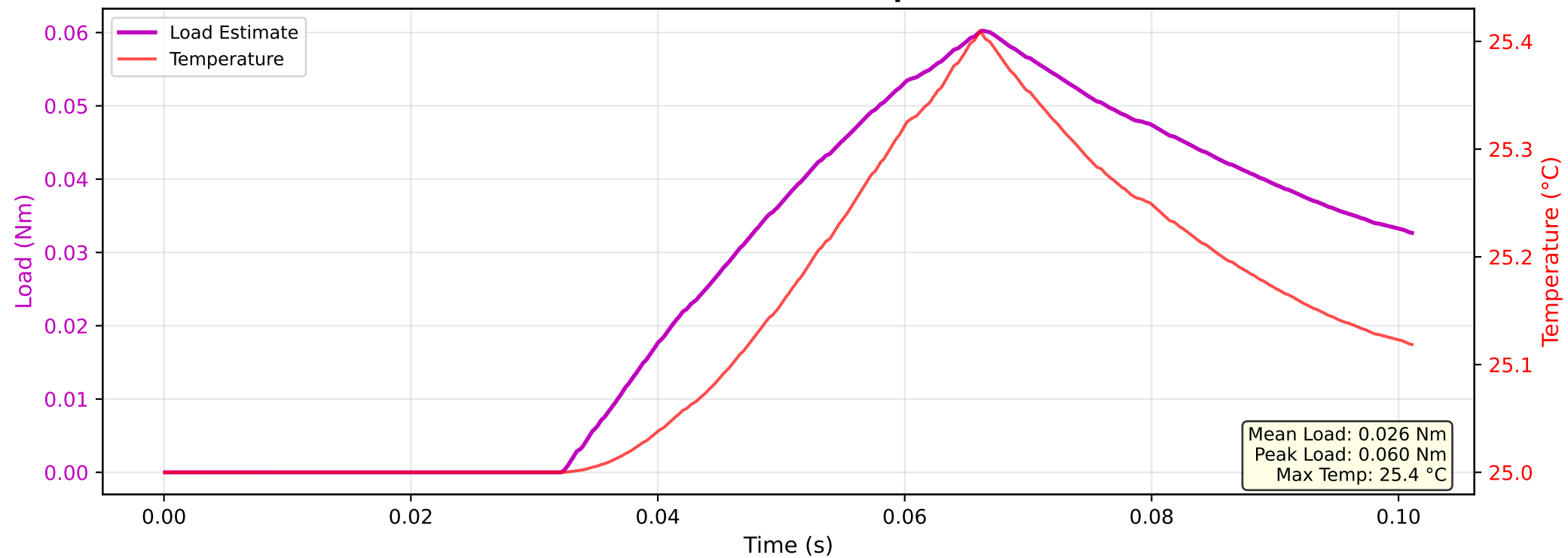
FOC d-q Axis Currents



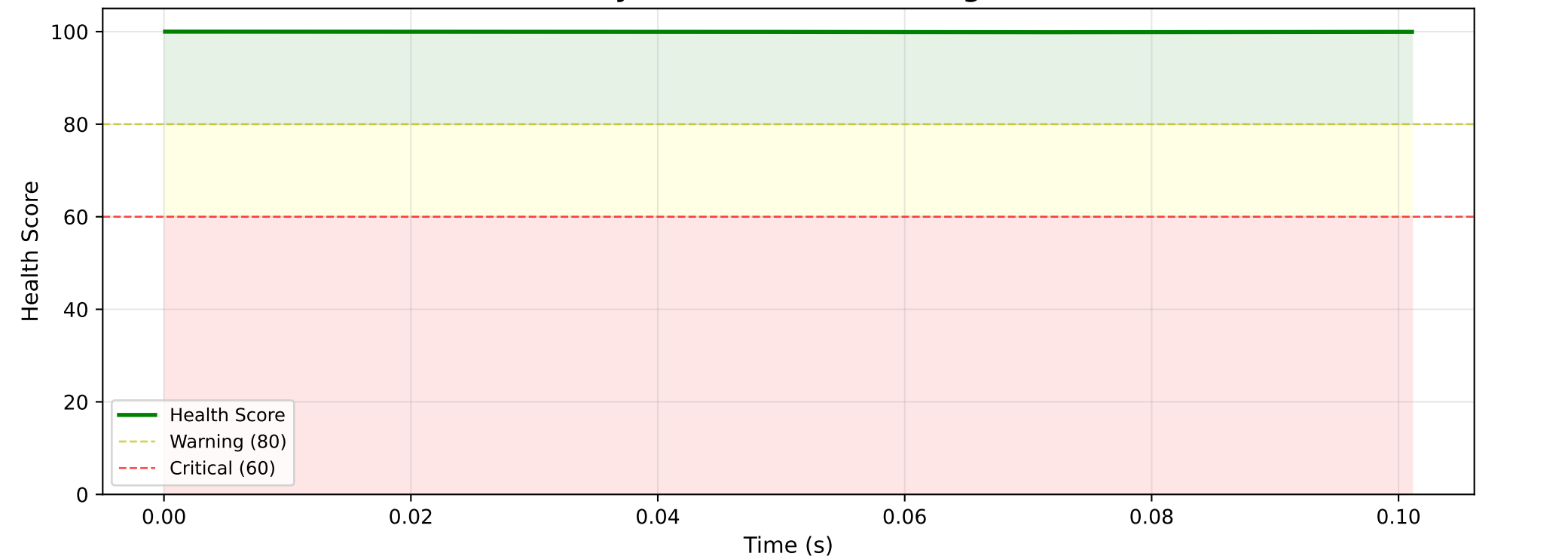
3-Phase PWM Duty Cycles



Load Estimation & Temperature



System Health Monitoring



Phase Diagram (Position-Velocity)

