

# FOC Test Report: demo\_adaptive\_load\_step

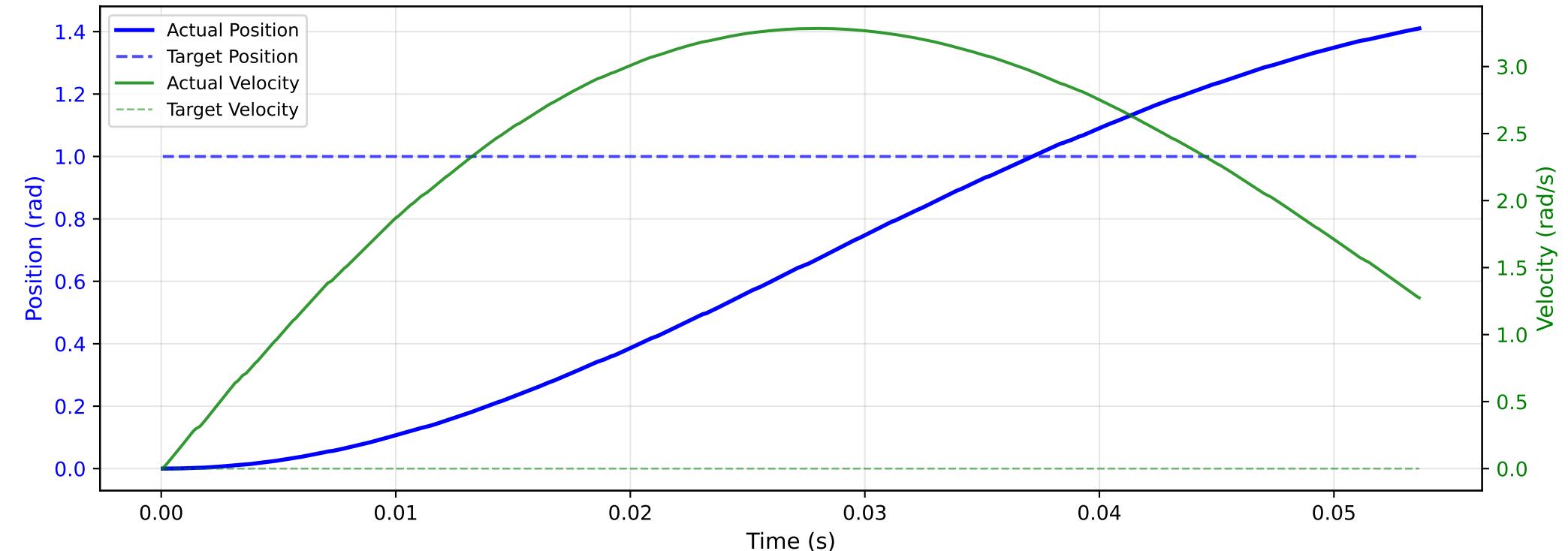
Test Name: demo\_adaptive\_load\_step  
Platform: Remode STM32G431CB  
Firmware: iRPC v2.0  
Start Time: 2025-10-07 21:26:47

Samples Collected: 600  
Test Duration: 0.054 s

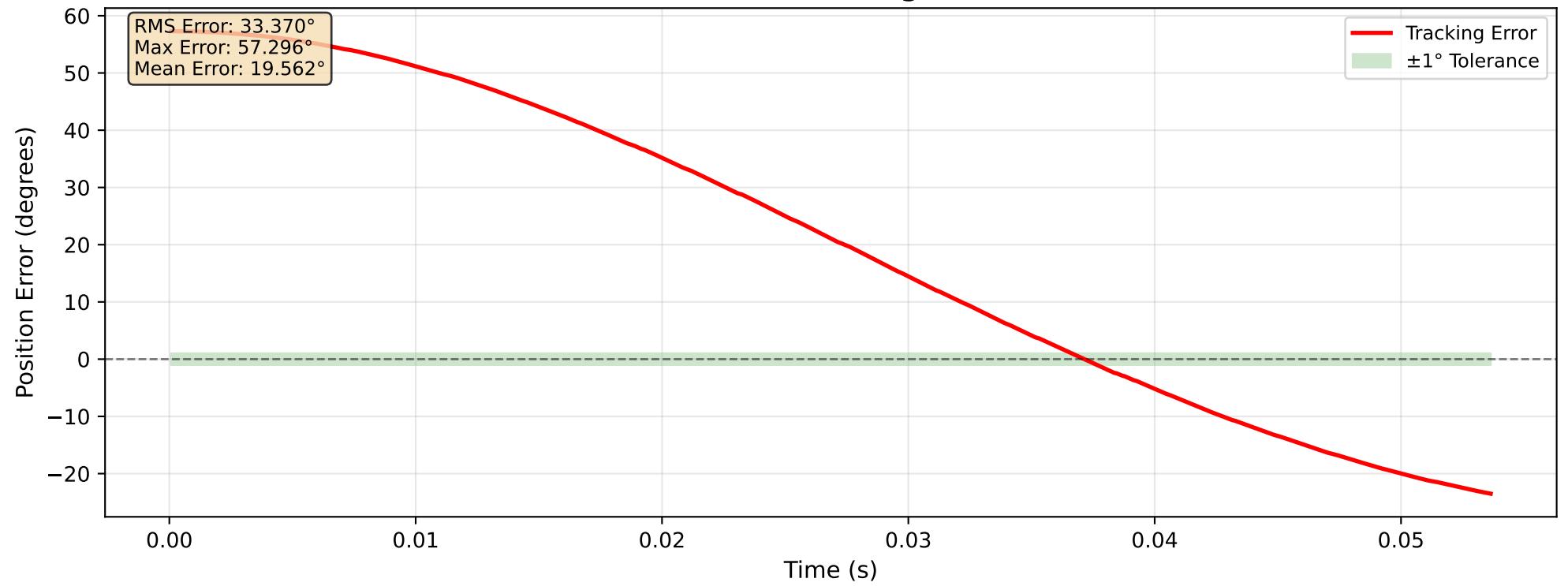
## Performance Summary:

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

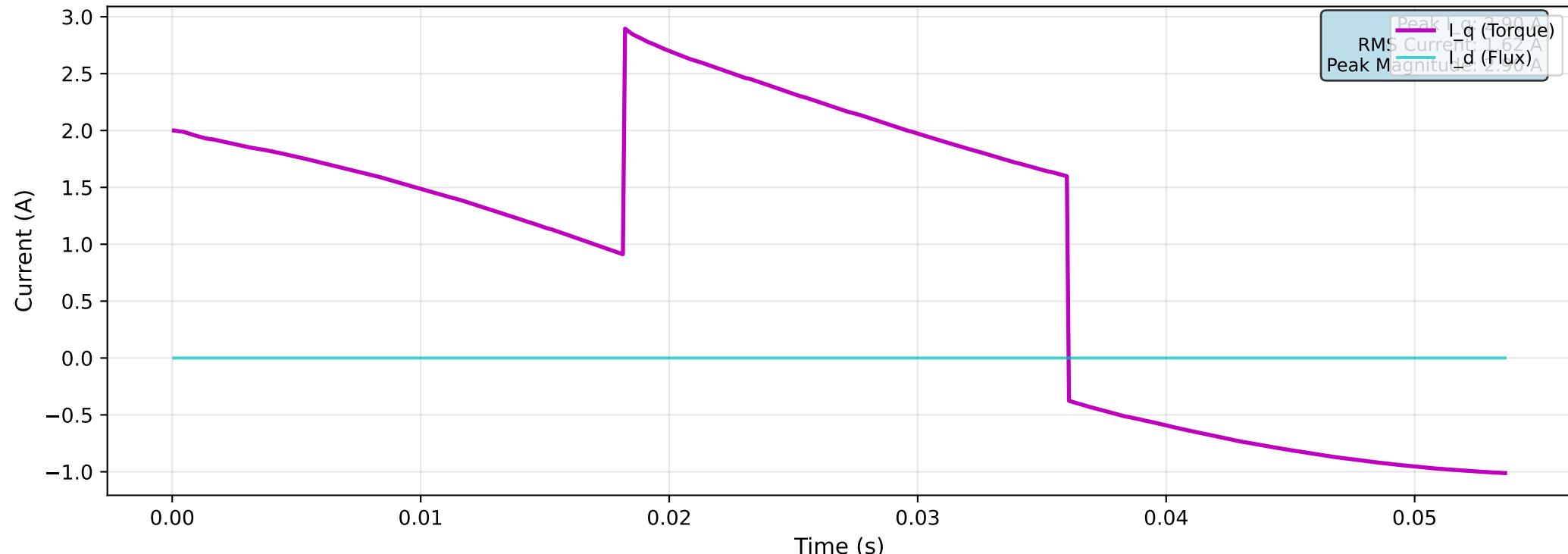
## Motion Tracking Performance



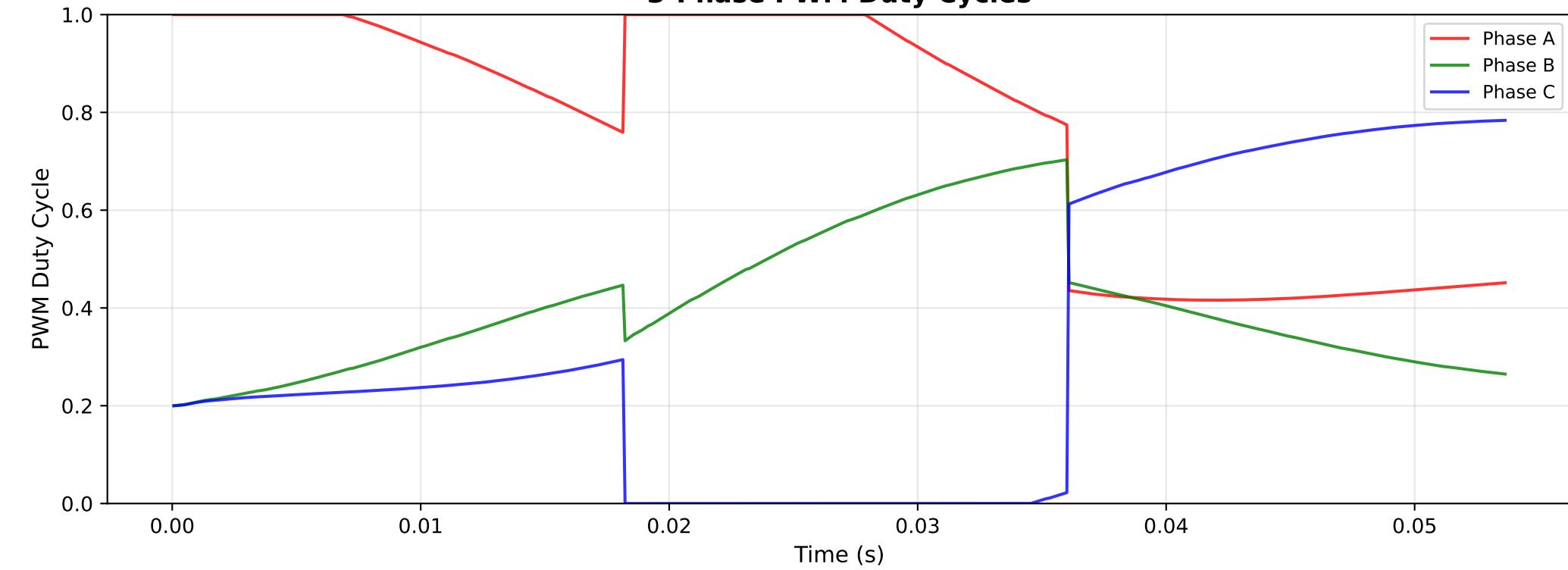
## Position Tracking Error



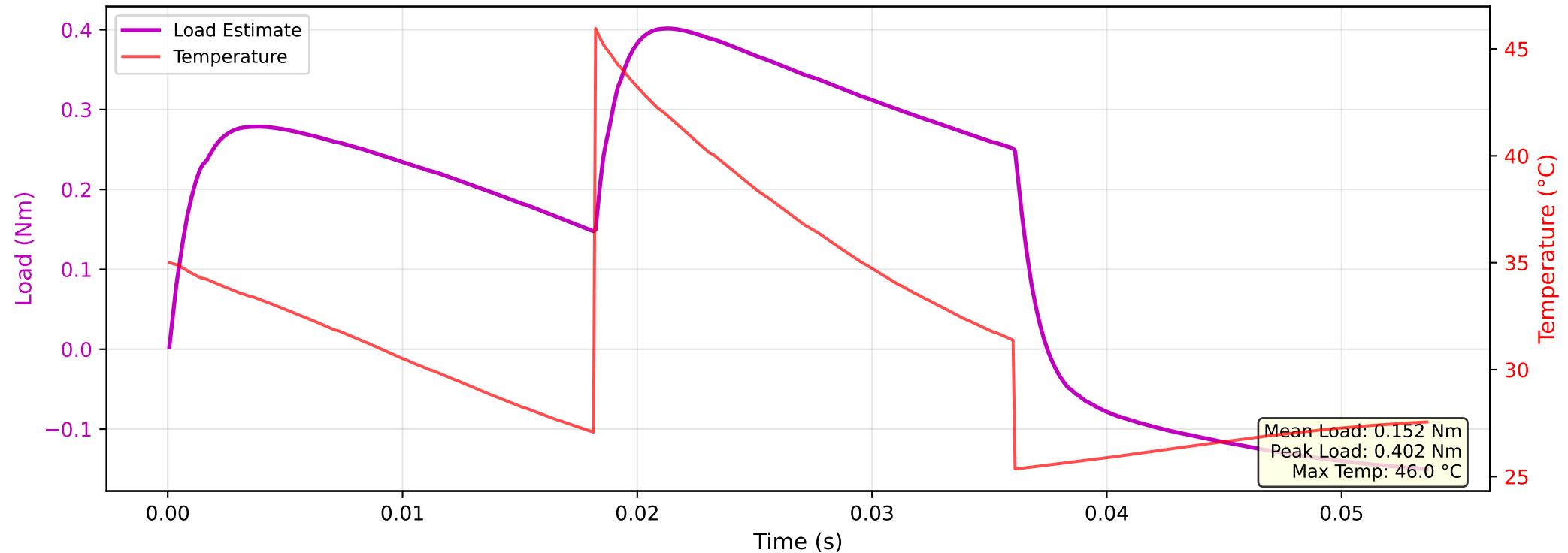
## FOC d-q Axis Currents



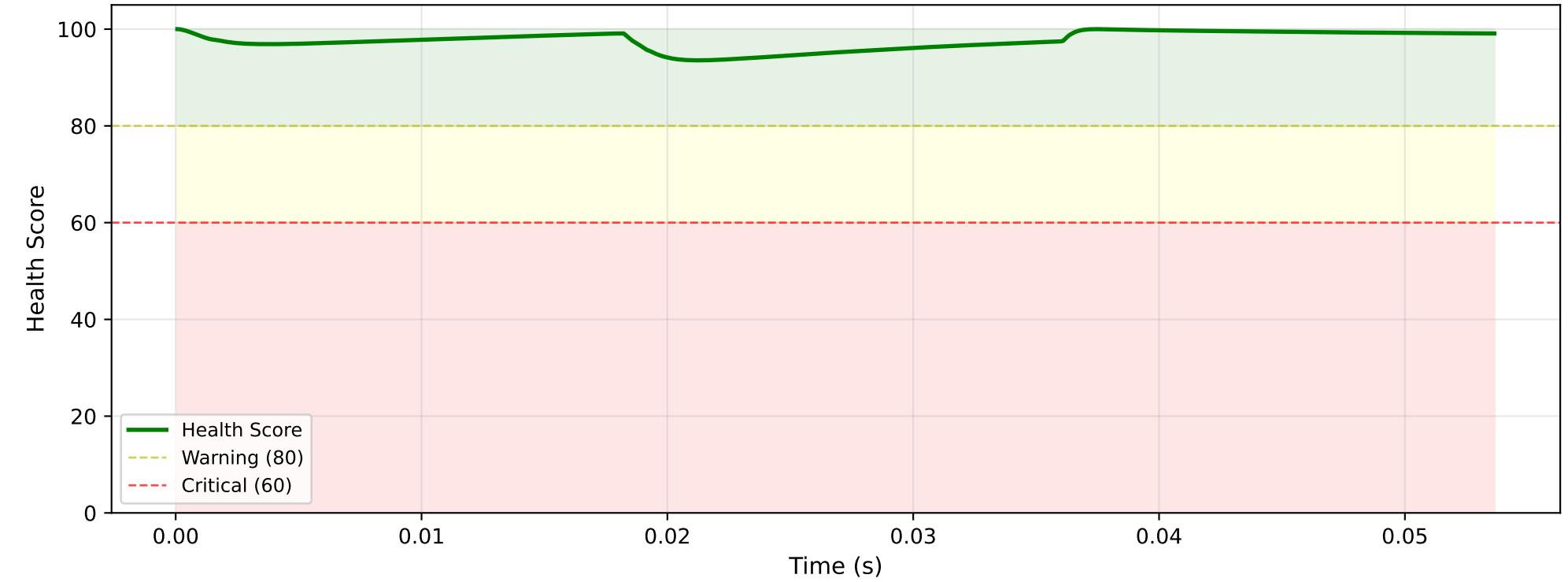
## 3-Phase PWM Duty Cycles



## Load Estimation & Temperature



## System Health Monitoring



# Phase Diagram (Position-Velocity)

