



# E RETENTION & ZOOM TESTING

**PLANE:** *Fw-190D-9 LATE*

## **TEST CONFIGURATION**

- MAP: Crimea
- WEATHER: Clear
- WING & TURBULENCE: Off
- TIME: 12:00PM
- FUEL: 100%
- WEAPONS LOADOUT: DEFAULT
- RADIATOR SETTING: DEFAULT

## **TEST METHOD**

- START @ 10kft @230mph IAS
- Apply Full Throttle & WEP (if aval)
- Dive @ -35° pitch
- Wait until you pass through 5,000ft
- Perform Pull out @ 5g (overload)
- Climb @ 30° pitch
- Wait until IAS = 110mph
- END



# DISCLAIMER

All graphs contain raw DeviceLink data unless otherwise noted as calculated. For example the TAS value is calculated from the DeviceLink IAS and Altitude values.

This analysis consists of two parts:

1. Energy Analysis
2. XY Flight Path Analysis

The Energy graphs assume an aircraft mass of 1kg, in that the actual mass of the airplane used in IL2 is not known. Therefore you would have to multiply the value listed in the graph to obtain the true Energy value in Joules.

The XY Flight Path graph uses the actual DeviceLink altitude value for the Y axis and the calculated X distance. The X distance is derived from the calculated TAS value and the calculated Velocity Vector Angle and time

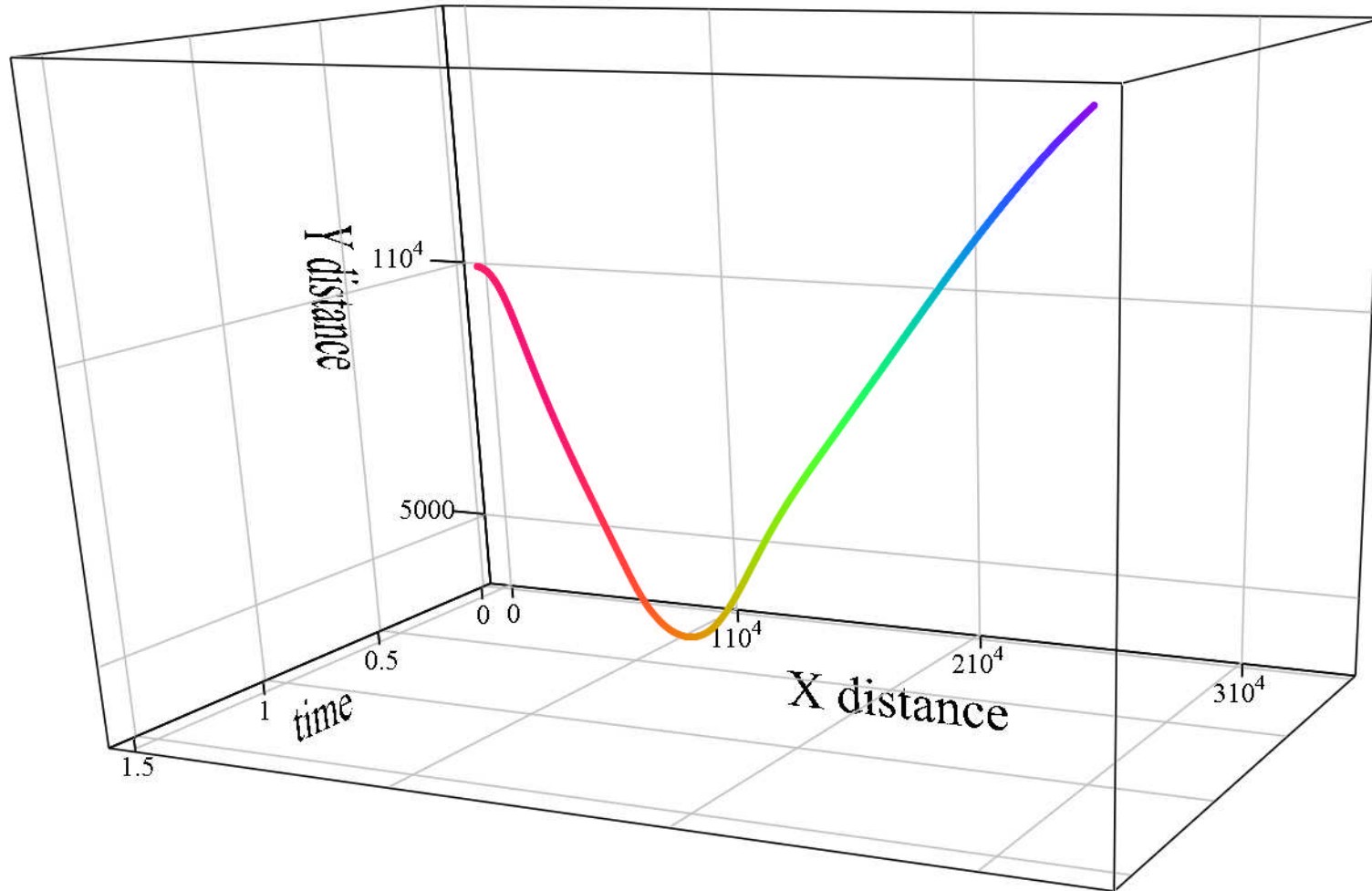
$$X = TAS \times \cos(\theta_{\text{vel vector}}) \times \text{time}$$

I have come up with a good approximation of the  $\theta_{\text{vel vector}}$  and validate it by calculating the Y distance and comparing it to the know Y distance (aka Altitude)

$$Y = TAS \times \sin(\theta_{\text{vel vector}}) \times \text{time}$$

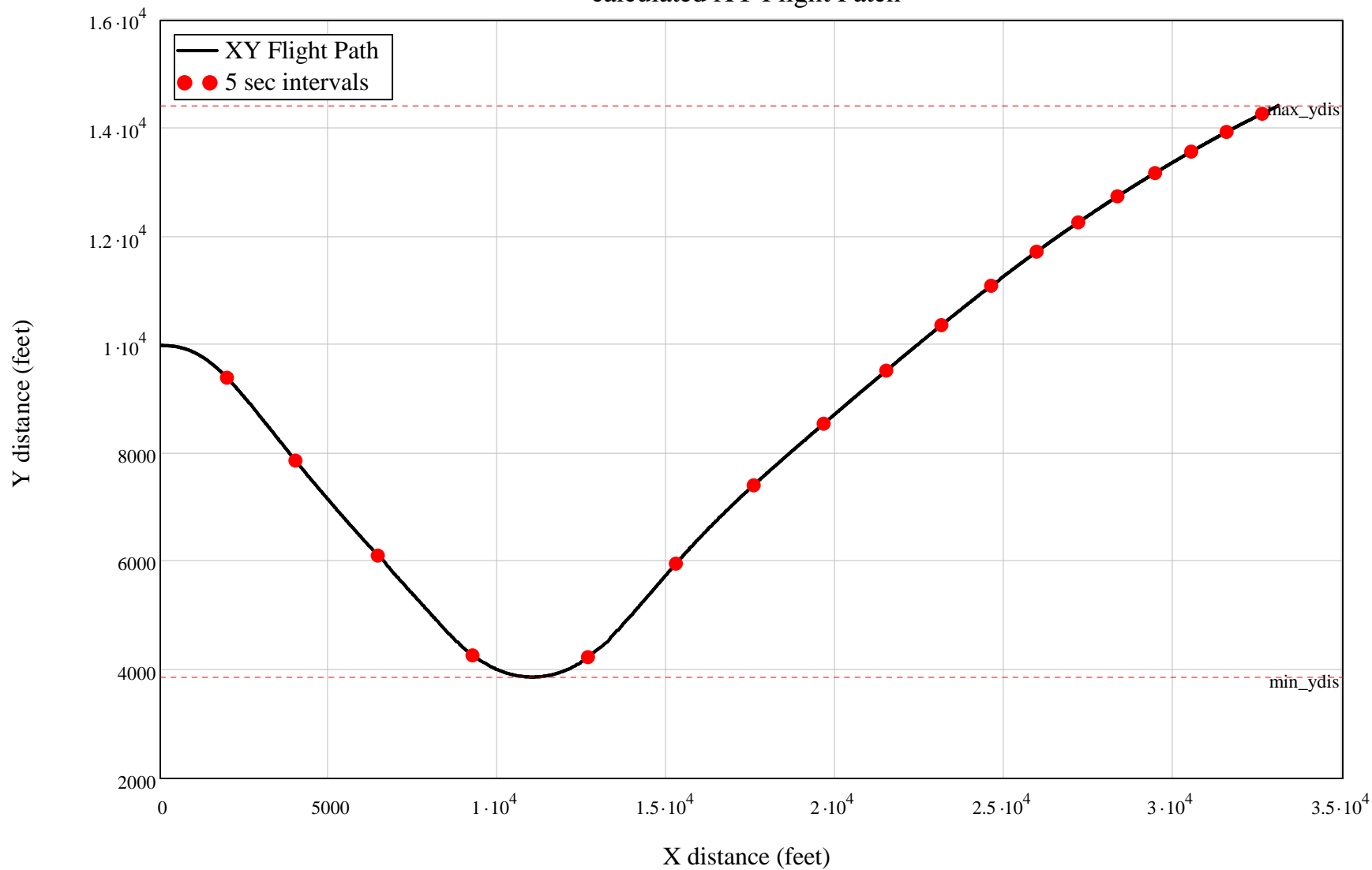


Calculated XY Flight Path vs. time





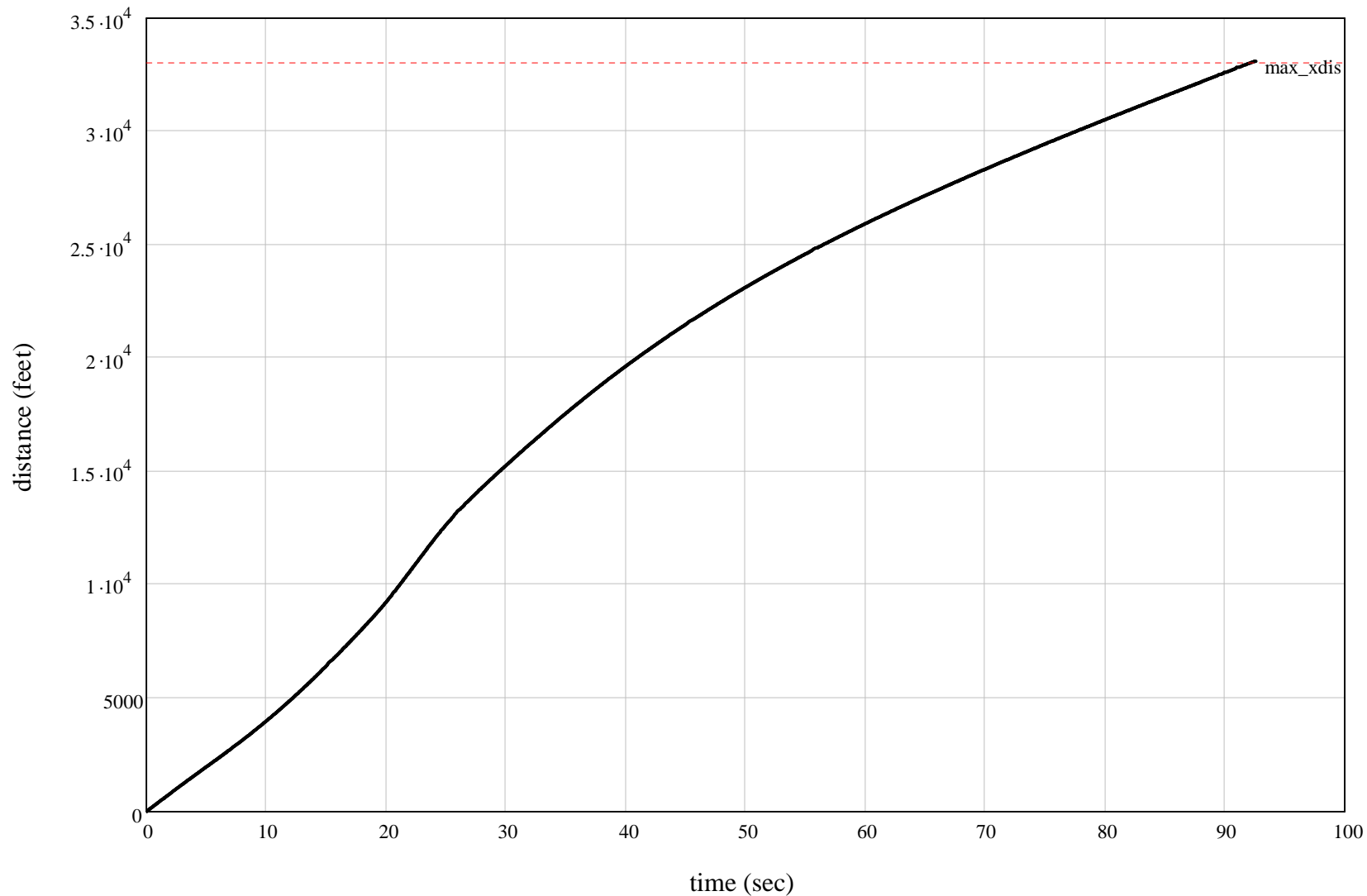
calculated XY Flight Patch



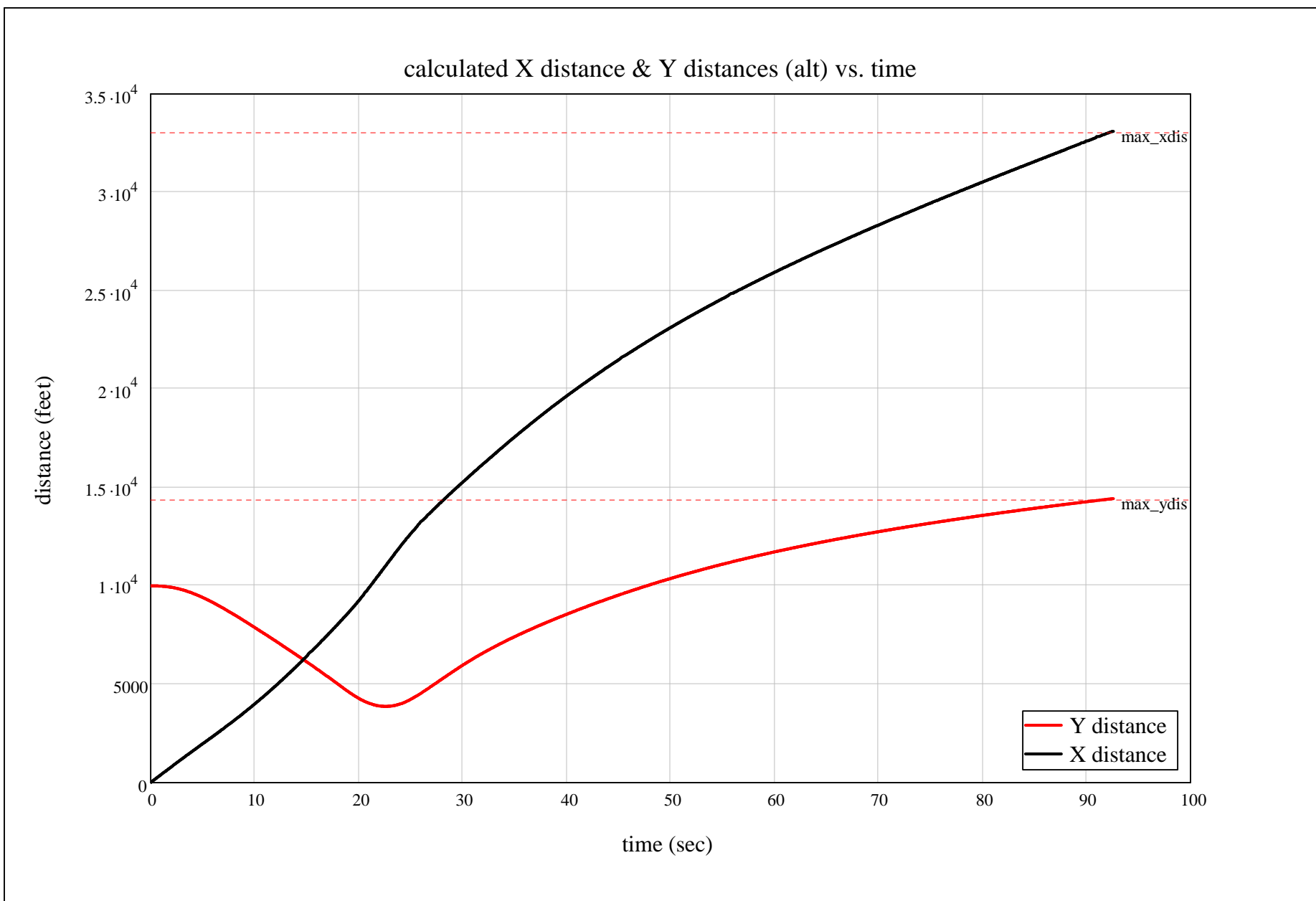
min\_ydis = 3870    max\_ydis = 14428

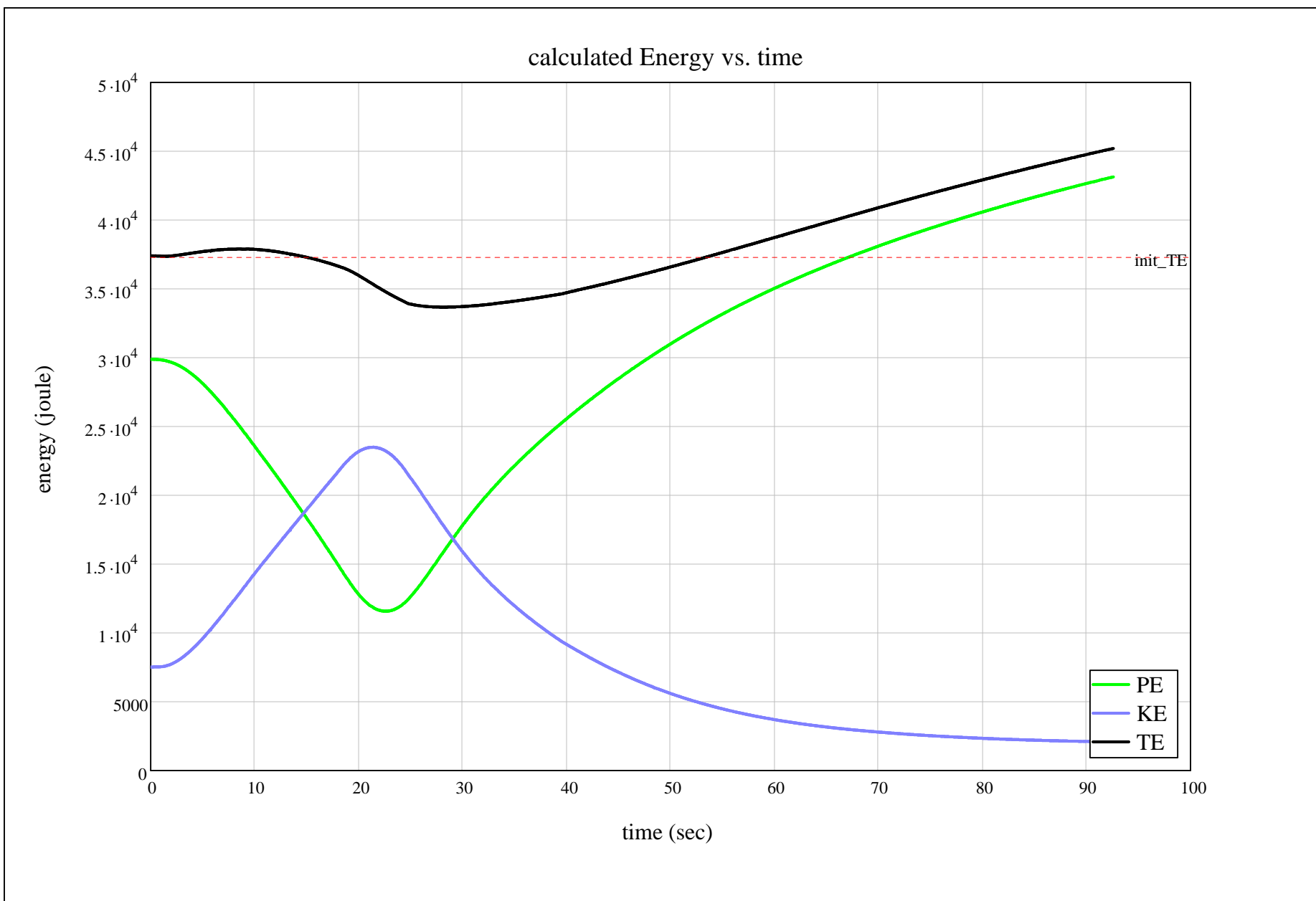


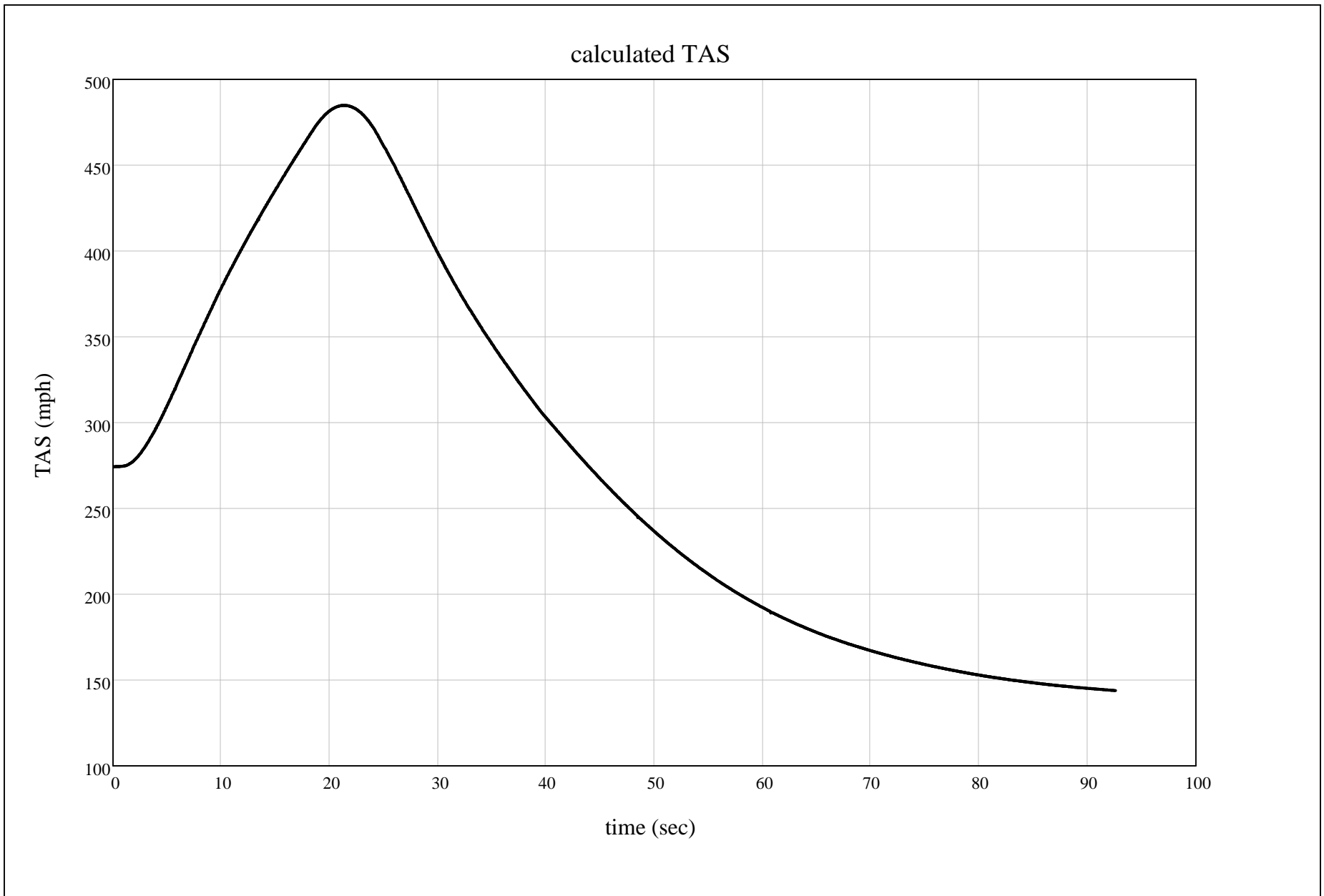
calculated X distance vs. time

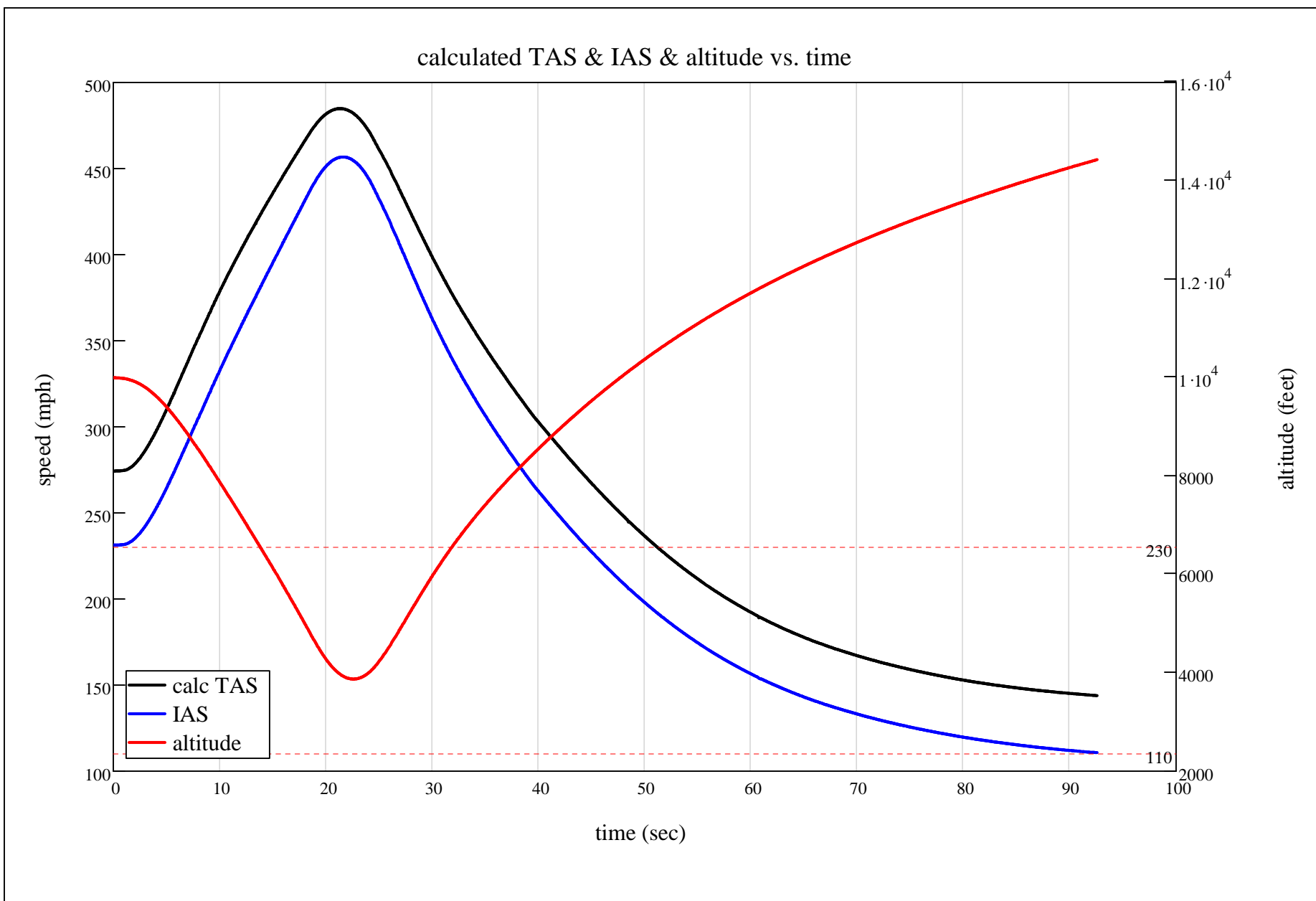


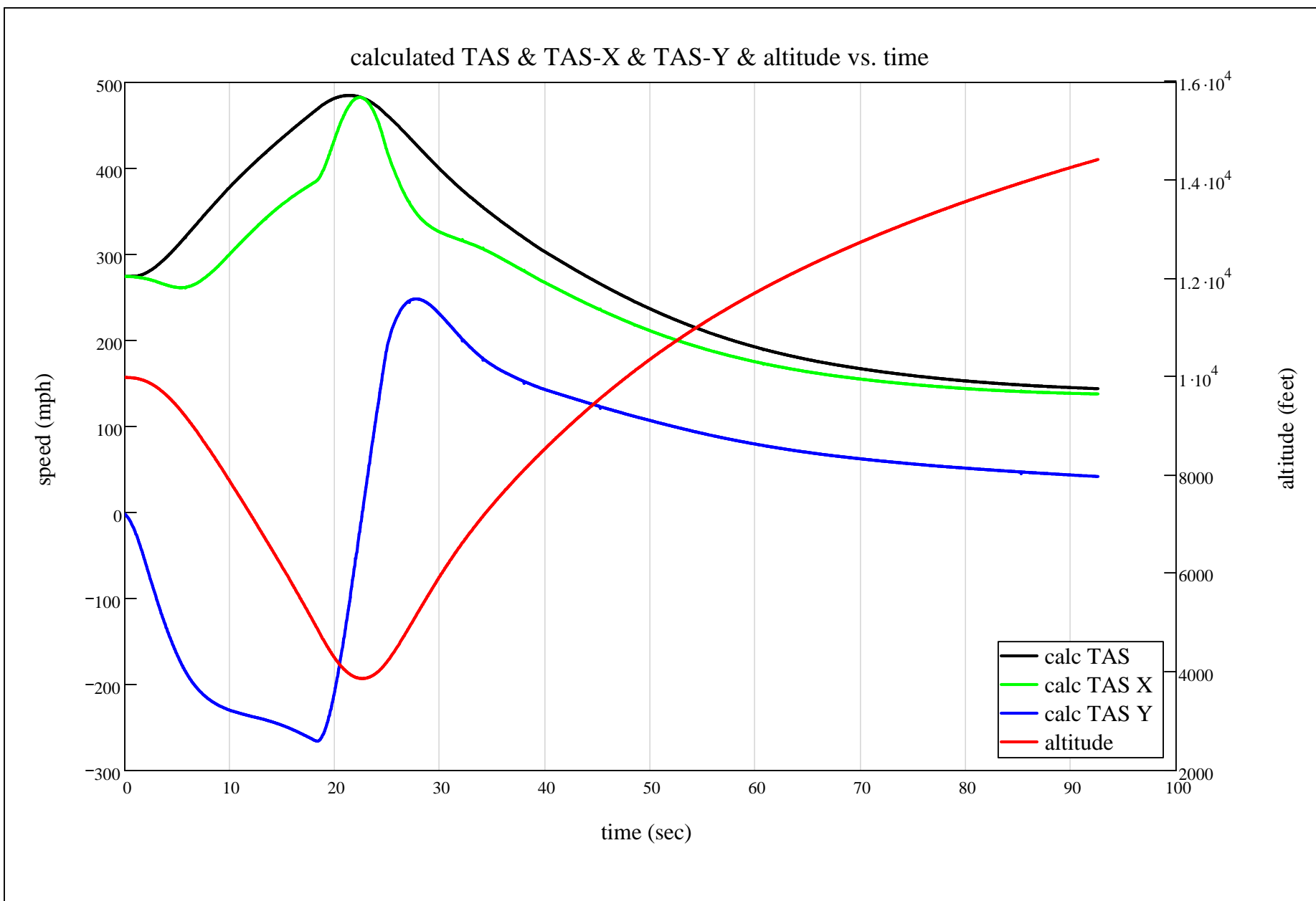
max\_xdis = 33093

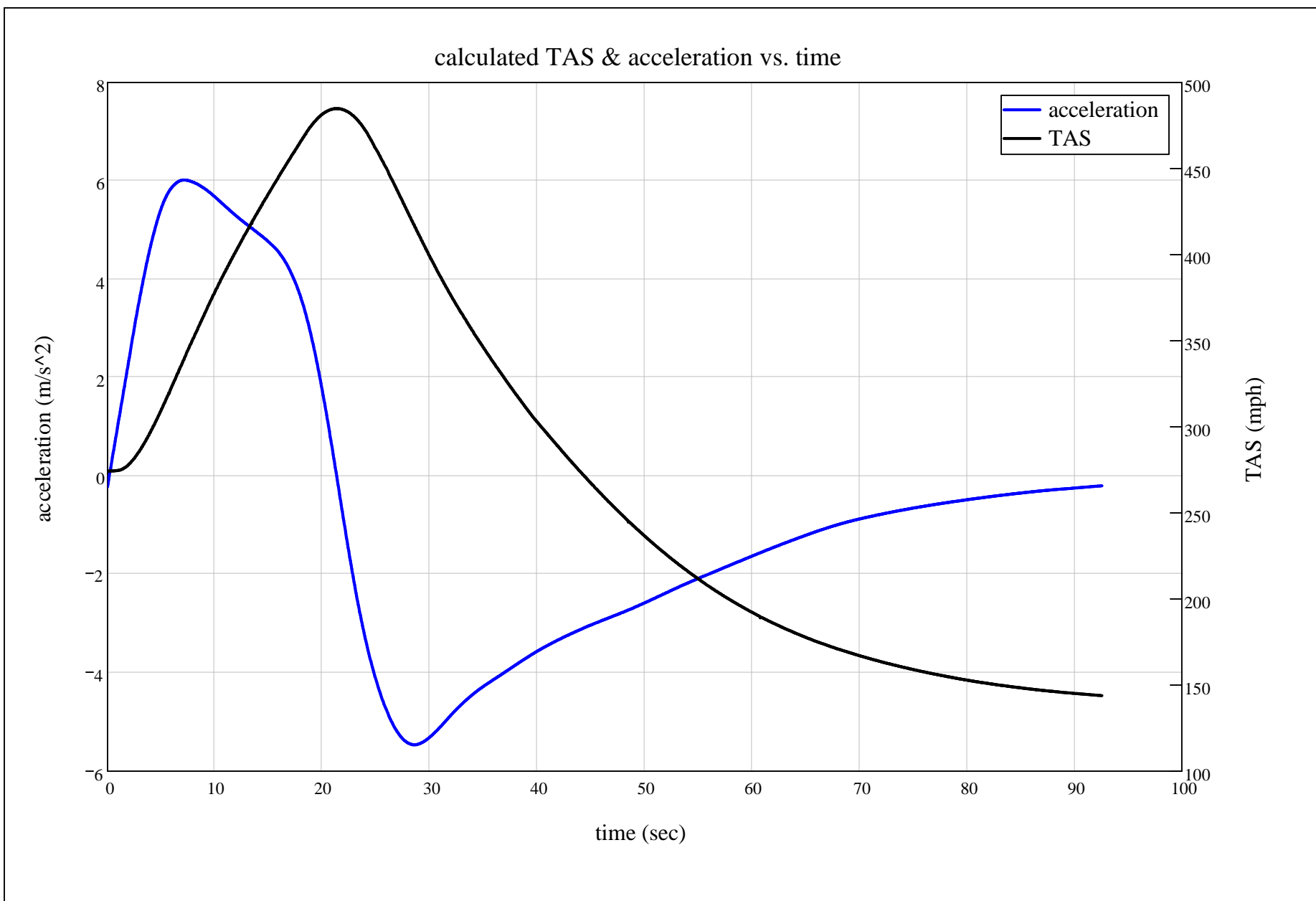


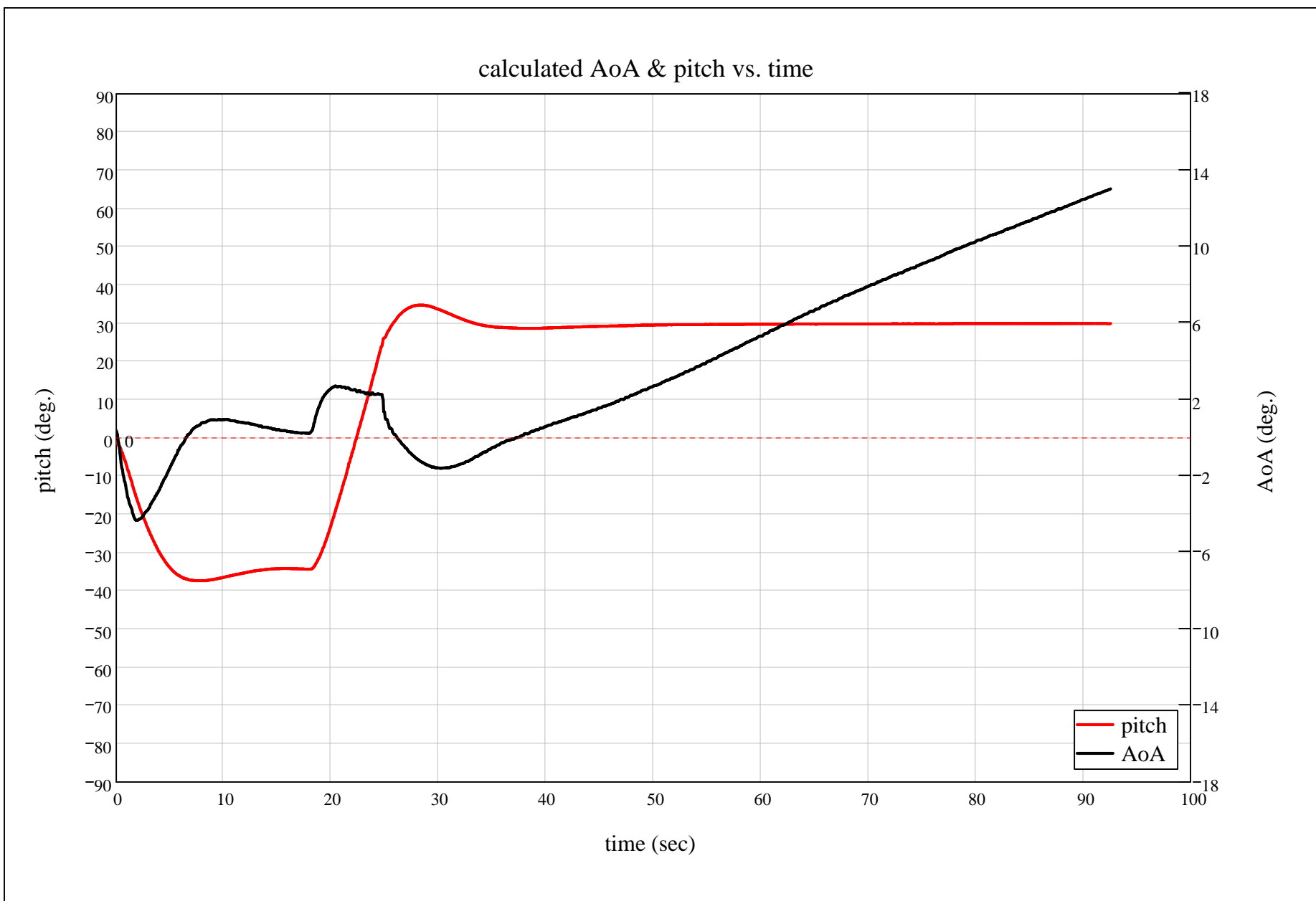


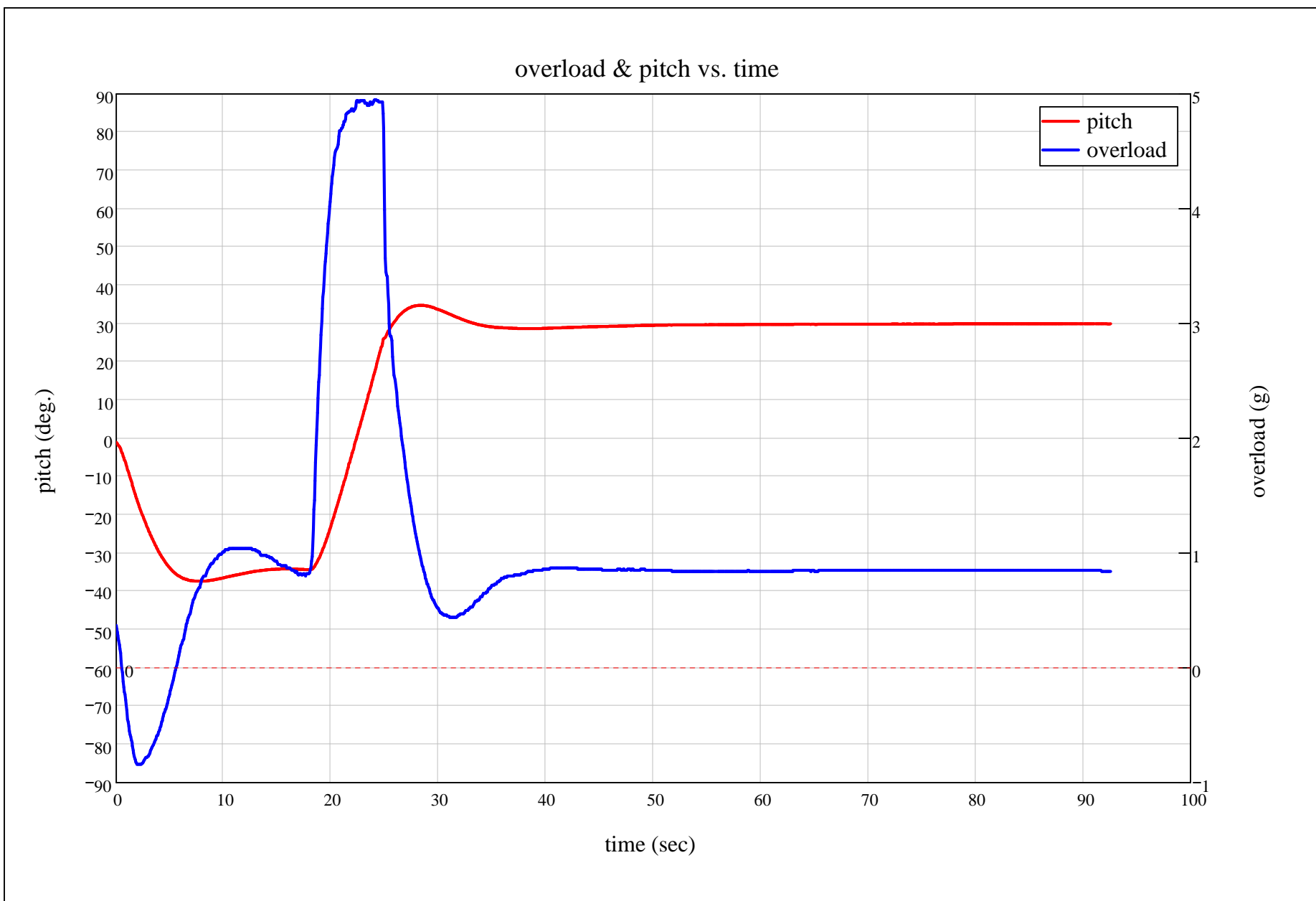


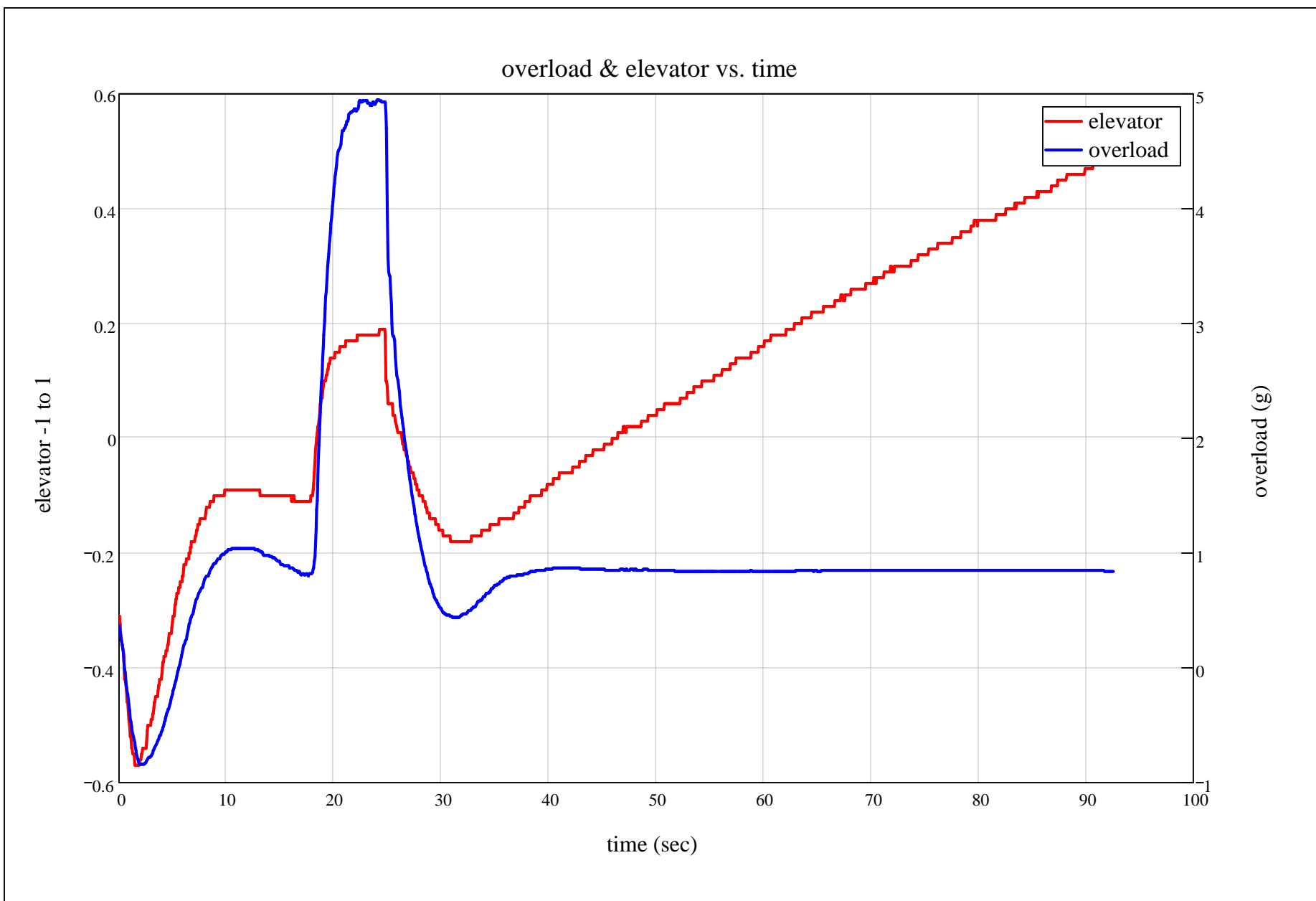


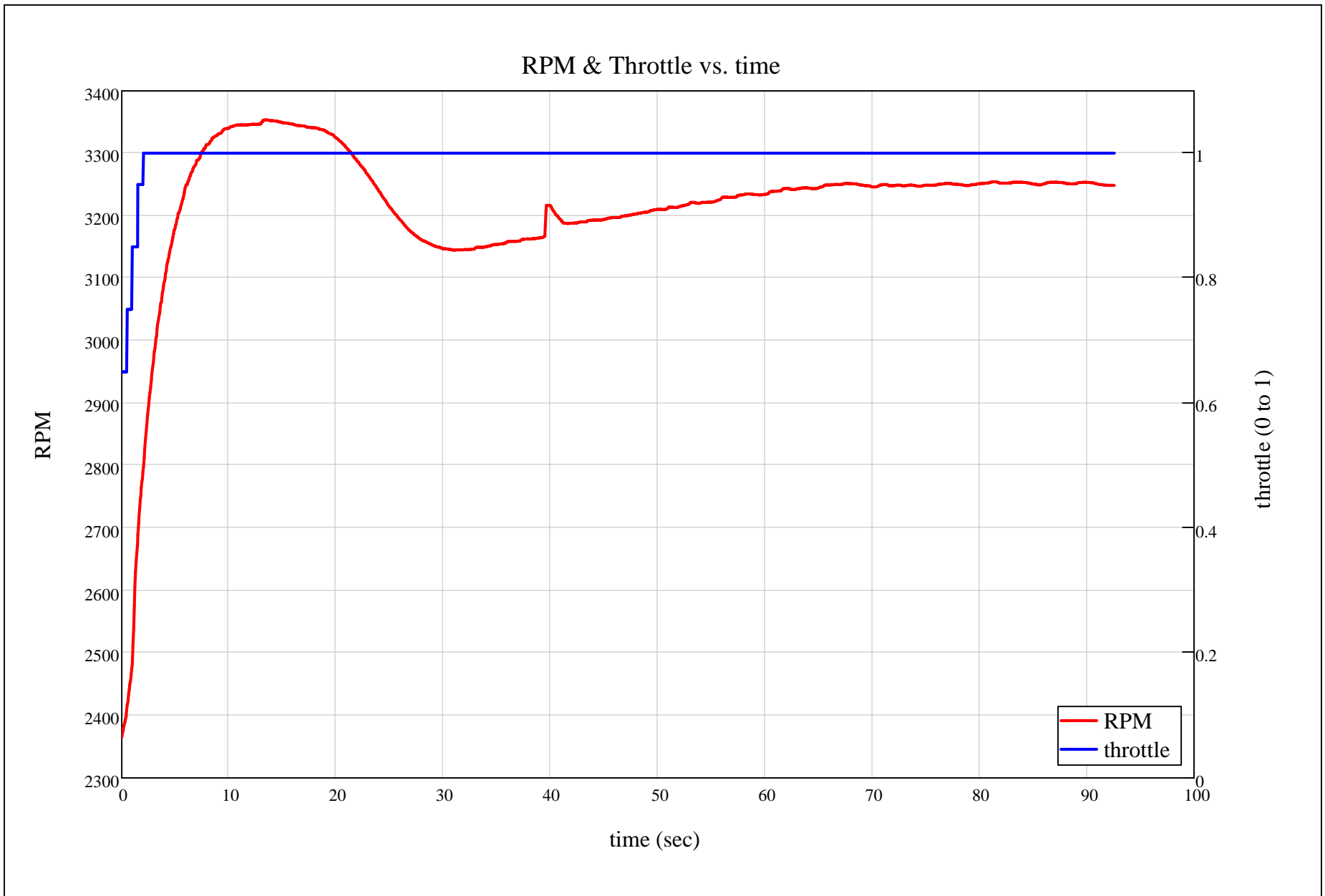


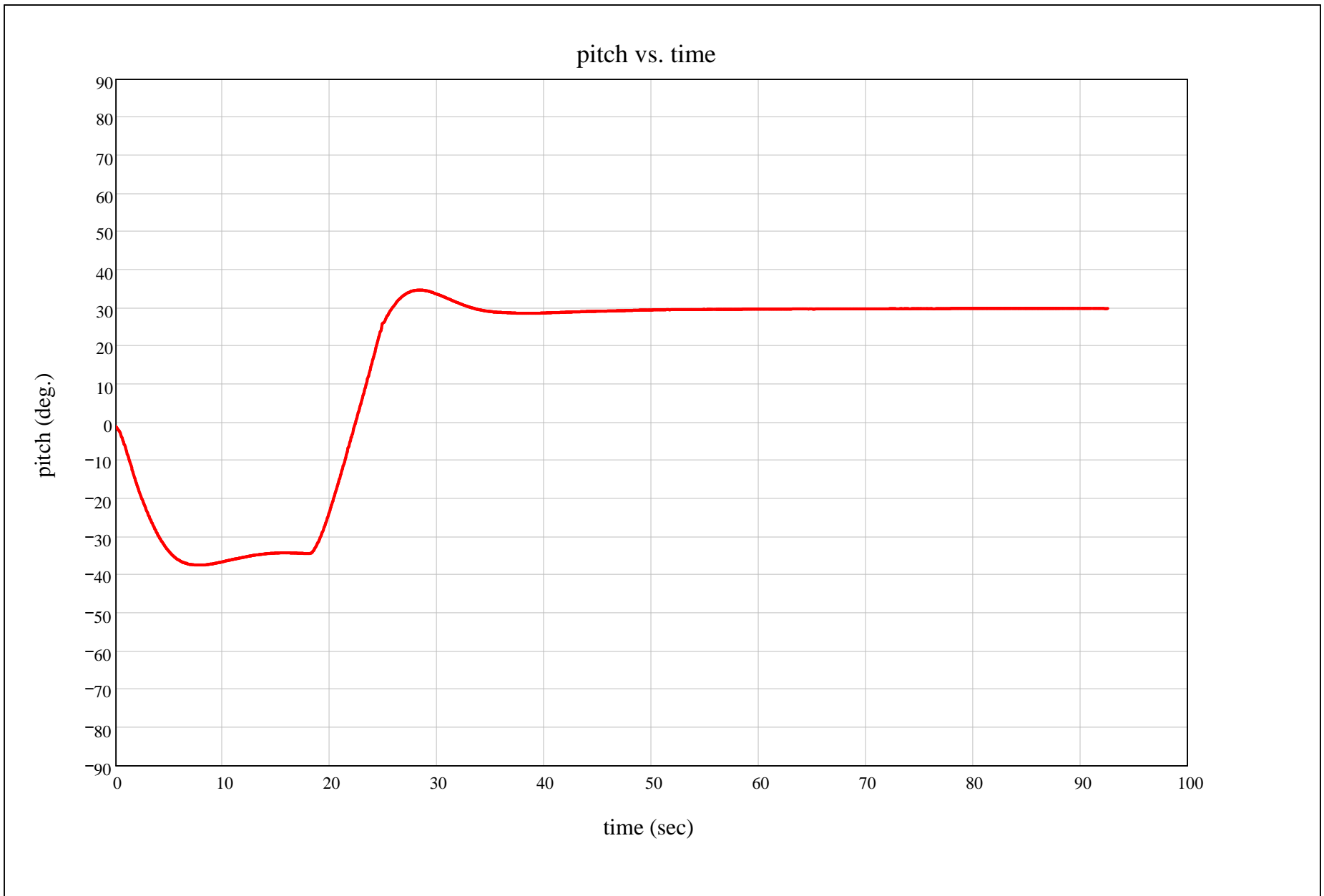


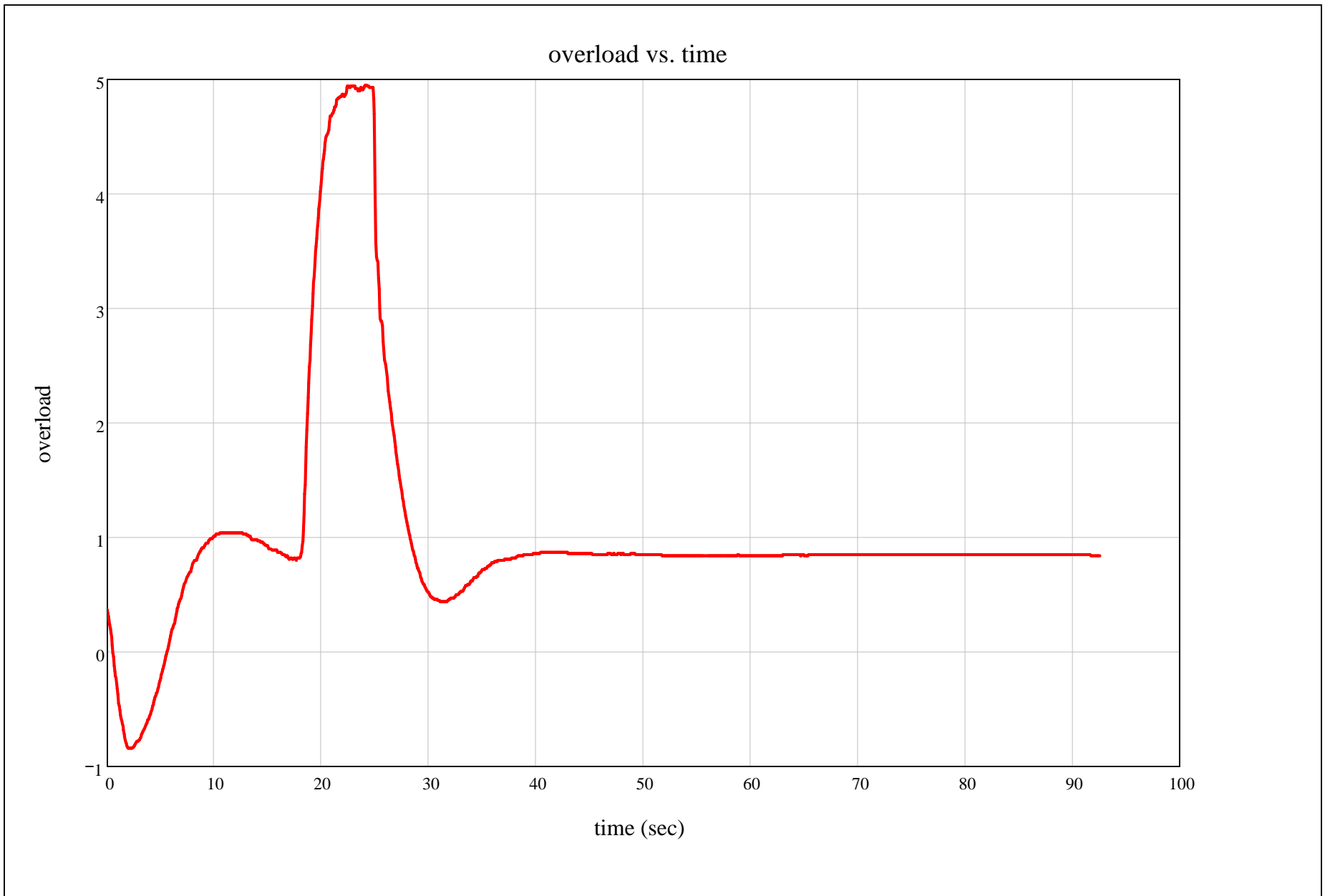


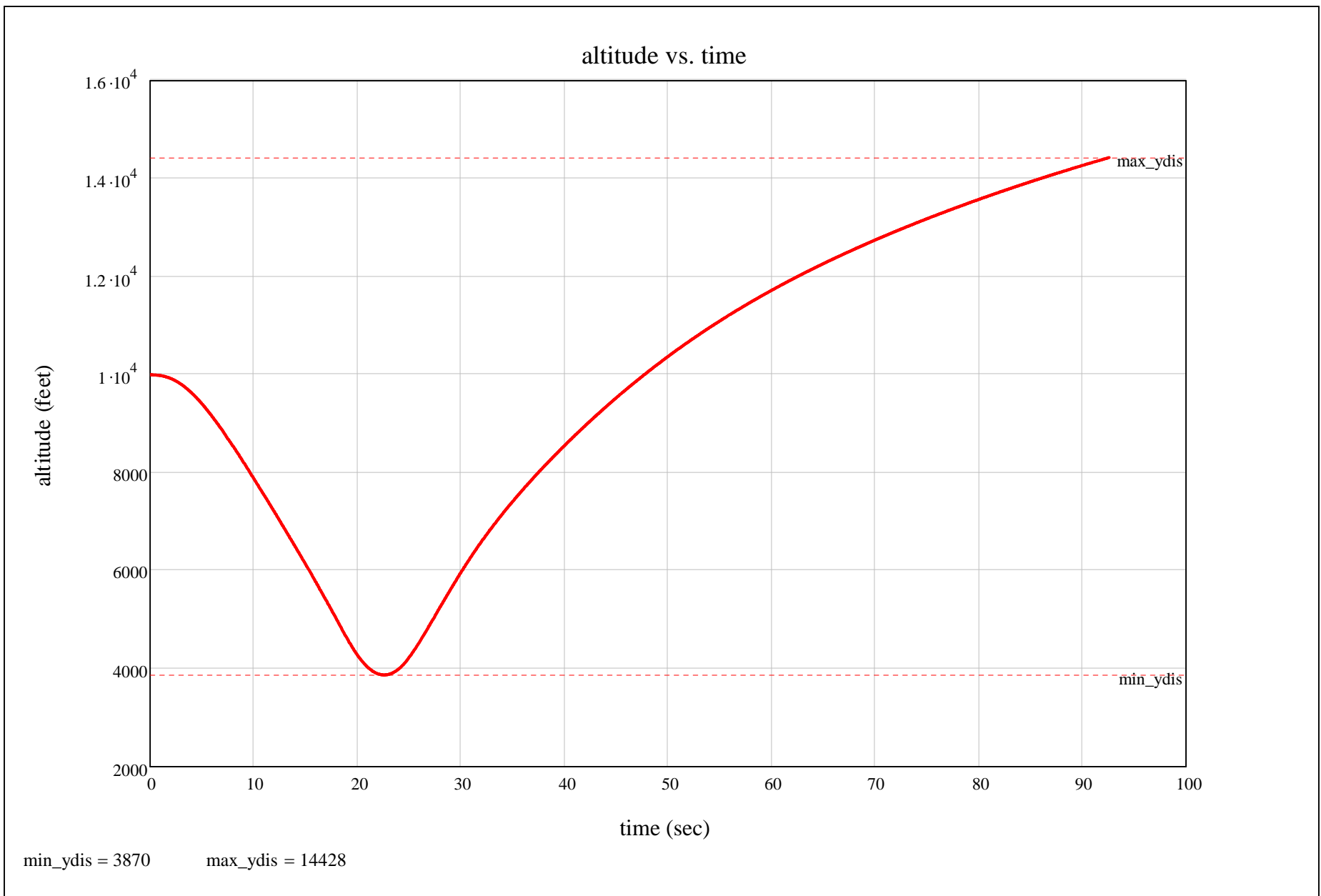






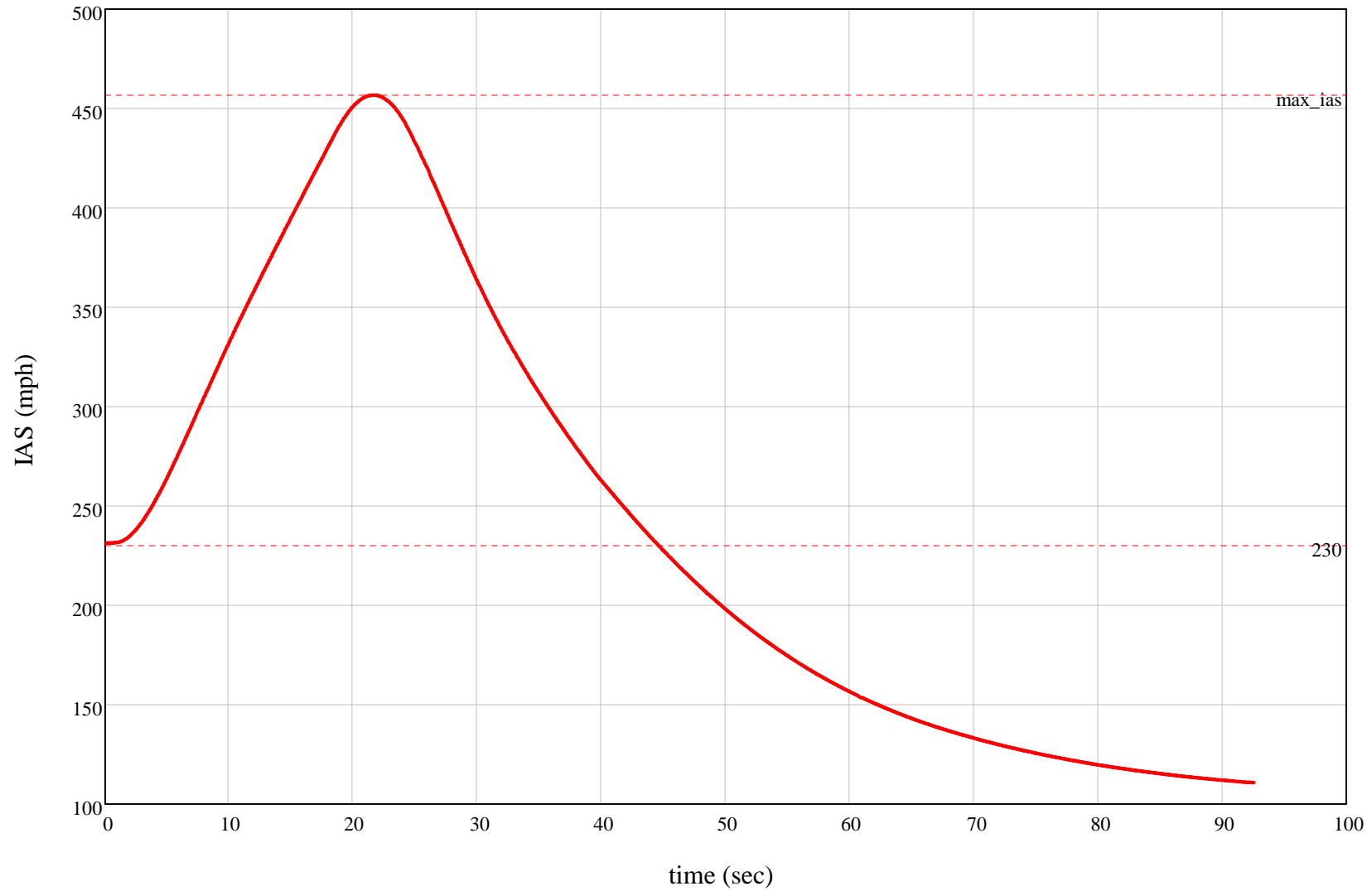








IAS vs. time



max\_ias = 457



IAS vs. altitude

