



Particle Concentration vs. Altitude

Kaye Yu, Mia Faust, Mia Pagliuca, Jesus Martinez, Emmanuel Zelaya-Armenta
Mentors: Dr. Timothy Frank, Rick G. Sparber
GCCAZ Team #1: Flight Club

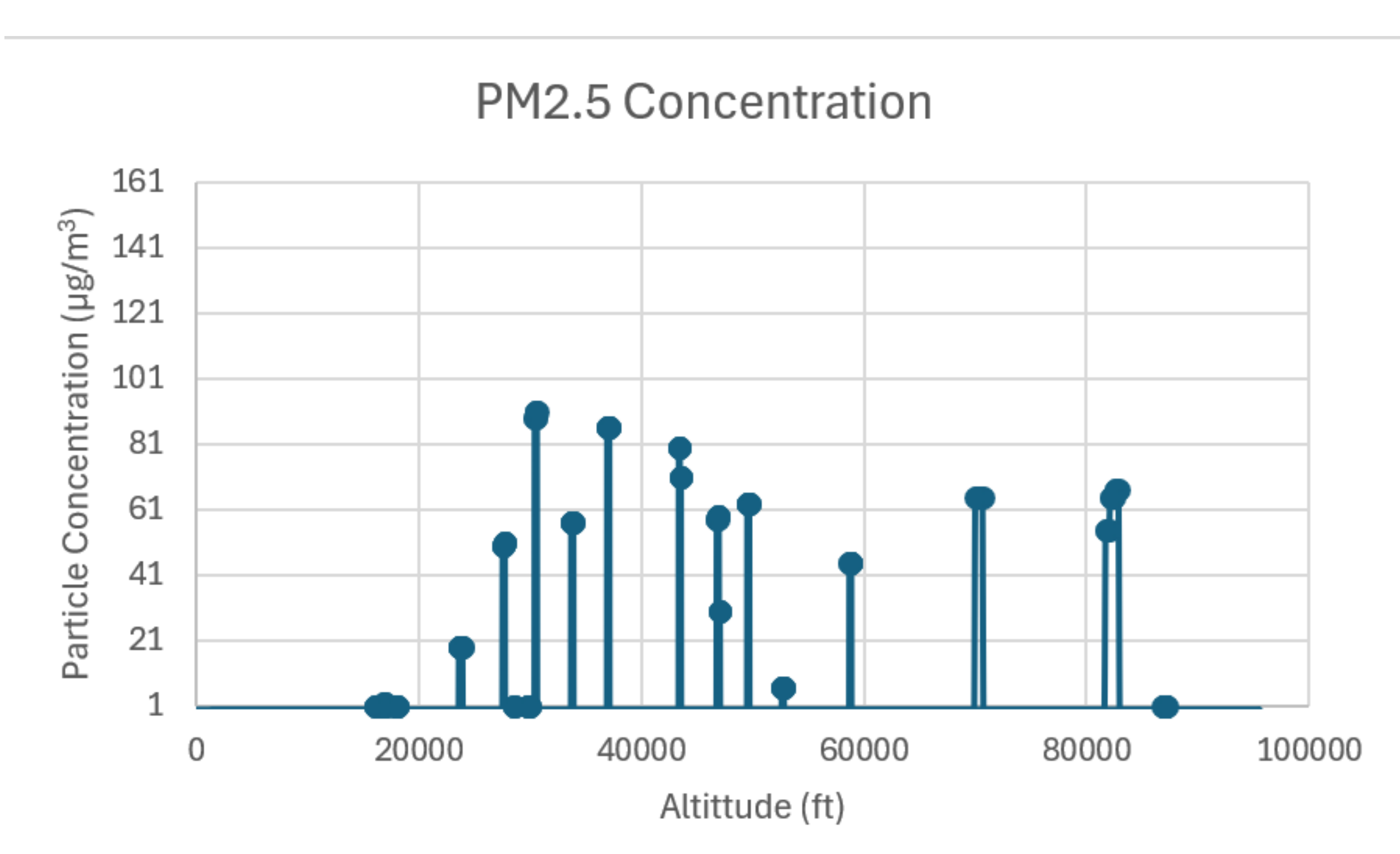
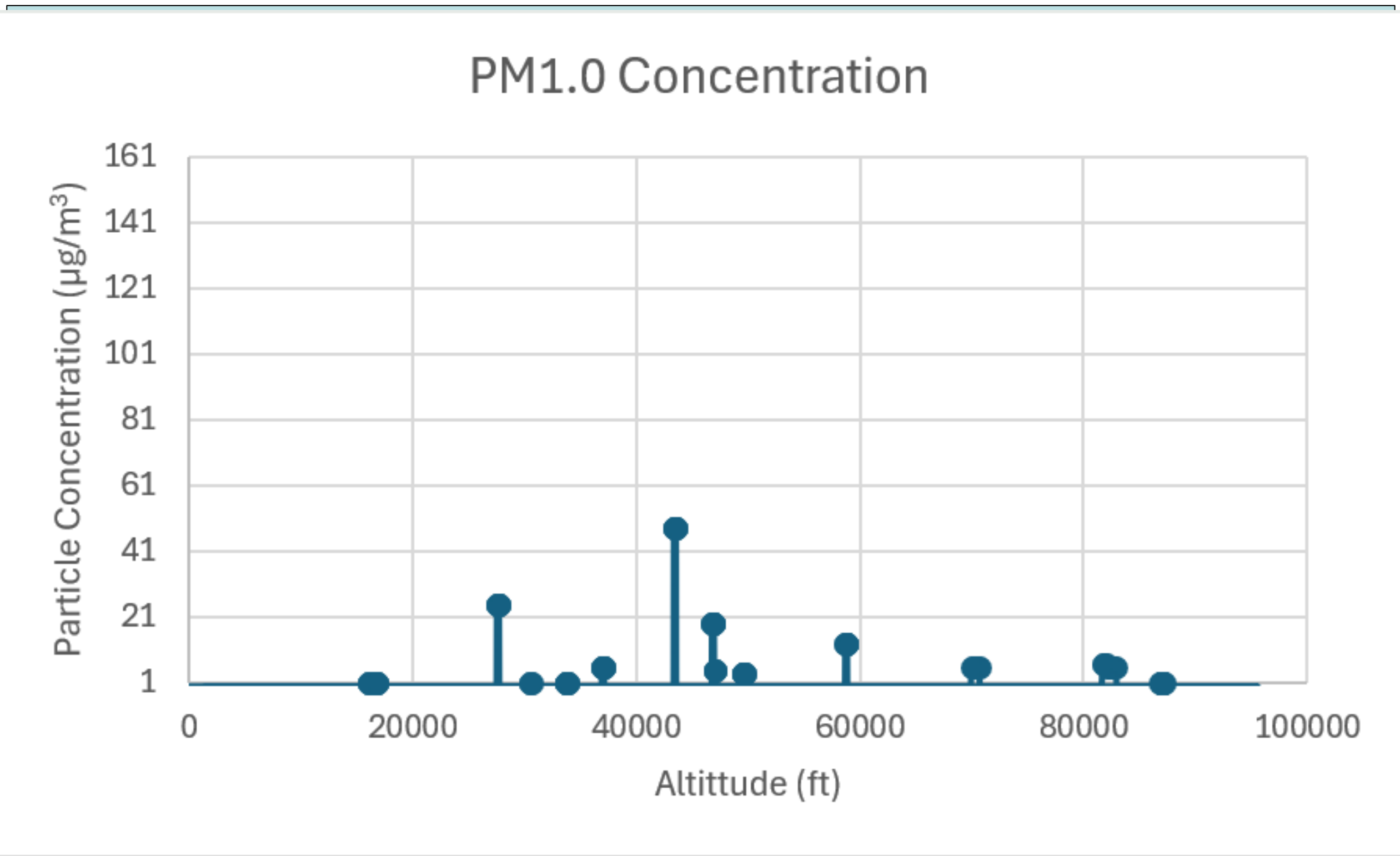
Overview: Our goal for this semester was to implement our analog sensors from last semester and add components such as the I2C particle sensor to test particle concentration vs. altitude.

Introduction & Project Description:

This semester our team wanted to challenge ourselves with improving the payload design of team #2 last semester and implementing a new I2C particle sensor to test particles in the atmosphere. The team measured the particle concentration with altitude.

Results:

The team launched with adversities fearing our components, especially the I2C particle sensor was not working. When retrieving the GPS data, there were some issues and inaccurate data. The improvement of the housing was effective aiding in the successful retrieval. I2C data was collected for PM 1.0, 2.5, and 10 and data supports that mid flight is when the highest number of particles were collected.

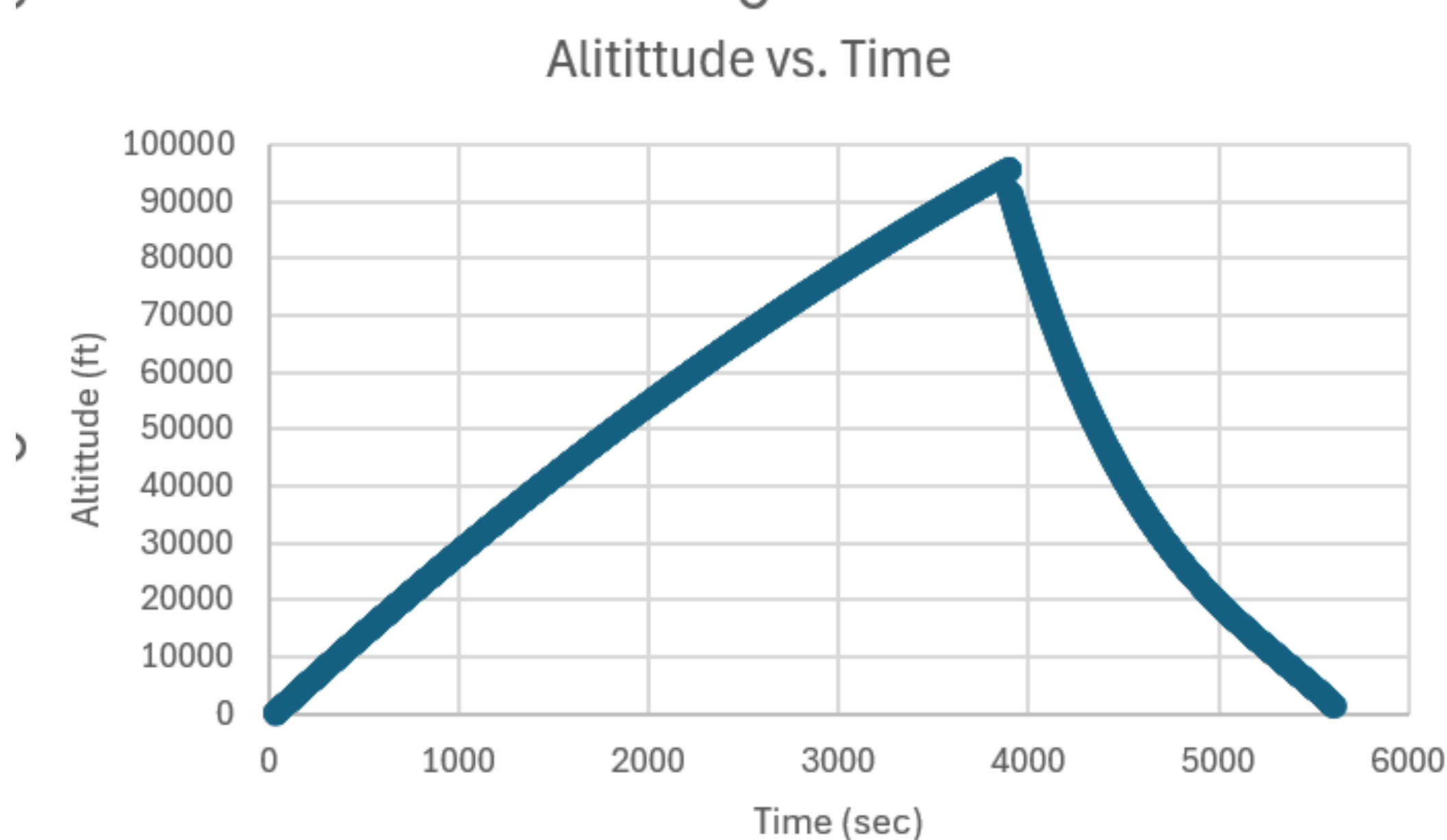
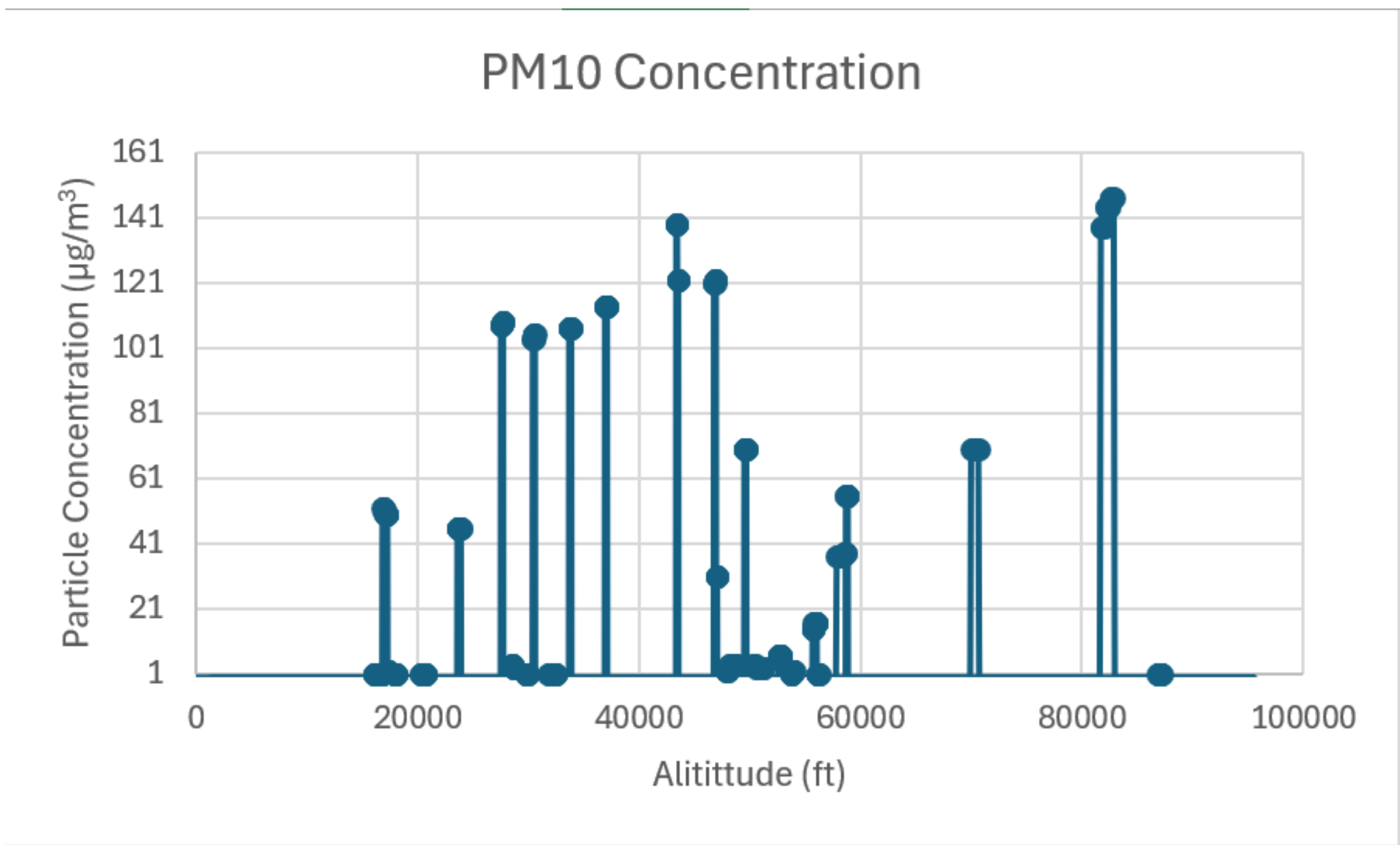


Methods:

We collected our data through the FDR and the SEEPROM oversaw writing and storing all our analog and I2C data. Our team also collected data from ANSR's GPS data to determine the correlation between ours and their data to accurately obtain altitude data. As shown above the I2C particle data from PM(particle measure) 1, 2.5, and 10 as well as the altitude data from ANSR and team data.

Conclusion:

In conclusion, there were some hiccups with getting the I2C sensor and SEEPROM codes to work efficiently and unfortunately the SEEPROM code was not tested enough and skewed the data from the flight. Even with these hiccups we had a successful retrieval and obtained data.



What we learned in the class: Our team was enrolled in NASA Ascend from last semester as well as this semester. Within this timeframe we learned valuable skills such as teamwork, communication, time management, patience, and hard work. We can't thank our mentors Dr. Timothy Frank and Rick G. Sparber enough for supporting our journey through this class and mentoring us to success.

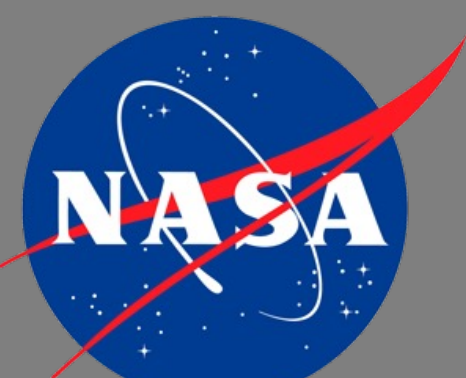


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