Thoughts for the Future

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Flow Control

Last Year's Ideas

- Flow Control → Nicole's talk

- Meteorology

- Real-time PM10 and PM2.5 (PurpleAir) → Nicole's talk

- MAIA → Ann's talk; NASA discussion tomorrow

An Addition for this Year

- Aeromet

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Meteorology

The Current Situation

- No meteorology at the sites

- Do not know key factors governing PM concentration, composition and visibility factors

- Need help with source attribution

Why Change?

- RH dependence is key to visibility

- Wind direction and speed can point to the source location

- New controller and internet to collect and transmit data home

What's the cost?

- Cost is less than $100 per site

- RH, Temperature, and Barometric Pressure can be obtained with Bosch BME280 chip (Built into PurpleAir and others)

- And controller and database programming costs

Sphere

Strain Gauges
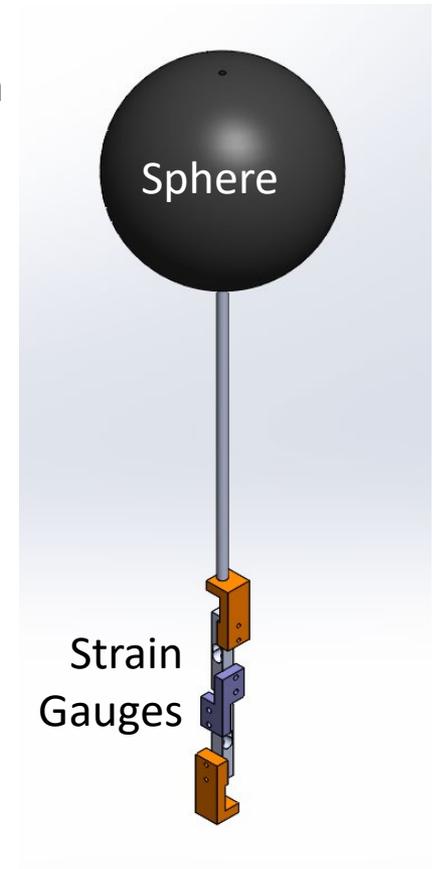
Aeromet

Who? What?

- Not this or that aeromet (private company, EPA Method 9, …)

- http://www.aerometproject.com/

- Goal: … improve the uncertainty of particle mass, size and number concentration measurements and the characterisation of regulated components in airborne particles as needed by EU air quality monitoring networks.

- EURAMET (EU Metrology Institutes) - EMPIR (research funding arm)

- 7 Work Packages
  1. Reference methods for PM10 and PM2.5
  2. Validated methods for PM components (EC/OC, ions, metals, PAHs)
  3. Improve quality of aerosol number measurements
  4. Quantify particle compositions in real time
  5. Improve x-ray methods
  6. Outreach to member states
  7. Manage everything and coordinate meetings

Proposal

- Reach out to them to find synergies

- Round Robin with them

AEROMET — Aerosol metrology for atmospheric science and air quality

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Questions?

Meteorology

AEROMET

MAIA (Multi-Angle Imager for Aerosols)

The Current Situation

- We do not have focused help from satellites

- NASA does not have ground truth synchronized with overflights

Why Change?

- IMPROVE provides mass and composition data in areas with generally low spatial gradients

- NASA will be launching MAIA whose goal is PM2.5 composition

- Better interpolation between our sites

Progress

- Other talks today and tomorrow

- Santiago, Chile

Flow Control

Good Progress on Last Year's Ideas

- Flow Control

- Meteorology

- Real-time PM10 and PM2.5 (PurpleAir)

- MAIA

How/If to Move Forward with Aeromet

- Who leads?

- Small subcommittee to make contact and report back?

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Network Reinvestment

Next steps

1. Flow control
2. Real-time PM1,PM2.5, PM10, T, RH, BP
3. Wind Direction and Speed
4. OK to use X module for MAIA ground truth if NASA pays?

Sphere

Strain Gauges