

# Which country do you live in?

belgium

netherlands

switzerland

ireland

norway

kosovo

uk

greece

spain

portugal

germany

# Are you.....?





# Do you have experience with PM2.5 sensors?

Yes, with the SDS011 sensor

not yet, but would like to do so

Yes. AirBeam and Dylos tech. I plan to also continue working with them.

SDS011 and SPS30, luftdaten

Yes, the NOVA SDS011

Yes, with SDS011 for about 2 years. Different type boards.

SDS011 for local citizen science project and work related (EU-project, co-located)

Yes, I work with the Plantower PMS7003

Yes. Dylos in Citizen science and AP project in Nairobi, Kenya. Purple Air in Tupumue in Nairobi



# Do you have experience with PM2.5 sensors?

Yes, plantower, OPC-N3, SDS011, but only as integrated in ready to use sensor systems

Trying with SPS30, Alphasense OPC and Purpleair

The quality of the data is a challenge

no. yes

No experience but will like to do so in studies in LMIC

In our case, many doubts e.g. how to calibrate, test for sensitivity ("validate" against standard sensors), lifetime ...

Yes, in the Carbon Tree Project we had a low-cost DIY station and the PM sensor was SEN0177 from dfrobot  
[https://wiki.dfrobot.com/PM2.5\\_laser\\_dust\\_sensor\\_SKU\\_SEN0177](https://wiki.dfrobot.com/PM2.5_laser_dust_sensor_SKU_SEN0177)

yes, with several sensors in the Vaquums project (SDS, Plantower, Winsen, PPD60, Honeywell, Dylos)

Difficult to engage citizens that are not so found of technology

# Do you have experience with PM2.5 sensors?

Many on the market, how to know which one to buy?



# What are the barriers/challenges of PM2.5 sensors?

we do not work with them because they are too inaccurate

Comparison reference monitors, humidity

Many! Connection failures, programming issues, controversy on their credibility, calibration, necessity of access to the field...

Data quality. Cleaning and interpreting the data.

detecting "outliers" and correcting (calibrating) sensor measurements to better align with reference measurements

Humidity issues

Many libraries, many different boards. What software is best for what?

We work with many sensors simultaneously, and mobile, and one challenge is to design the logistics for monitoring quality

Obstacle - perceived issues with accuracy/reliability.



# What are the barriers/challenges of PM2.5 sensors?

the app not being in the apple store, interpreting the data sometimes

cannot distinguish between minerals/chemical compounds

coupling with geolocation and get it accurate

Main obstacle is more depending on the hardware wifi range.

Safety when people using them (in informal settlement in Nairobi)

schools lockdown and engagement; long term funding & motivation;

Ethics of raising awareness of issues of AP and people not being able to do much about it

useful visualizations, besides colour dots

no real hourly reference available... hard to correct for RH without knowledge of composition of PM

# What are the barriers/challenges of PM2.5 sensors?

Lack of reference data in low and middle income countries

PM2.5 is not the best traffic related indicator. Most people don't know that ...

no recalibration

What else can you measure with low-cost sensors? E.g. noise

A



# Give your suggestions for a next lecture!

Other measurement methods

More on mobile sensors!

Atmospheric chemistry - what the component parts of PM are

Open data pipelines, how to do this collaboratively

Aggregation of sensor data into models?

More on mapping aspects, how to analyse and represent the data.

I dont know if it is possible but a step by step tutorial on how to set up and calibrate a low cost sensor would be amazing

other air quality apps/sensors

impact that data findings have on citizen's perceptions of AP risk



# Give your suggestions for a next lecture!

What does NILU institute do with Sensor.Community data? Was there something done in the past?

Ethics around this - how participants can move to action

analysis of sensor data - any special considerations ?

mobile data on AQ and privacy

How to engage with the disengage - how to make citizen science more inclusive?

data privacy when engaging citizen scientists

more examples of applications



# Any other question or remark?

