



## Questions & Answers Session 3

Please type your questions in the Question Box. We will try our best to get to all of your questions. If we don't, feel free to email Pawan Gupta ([pawan.gupta@nasa.gov](mailto:pawan.gupta@nasa.gov)).

Question 1: Are there any similar air quality satellites covering Africa? Or plans to have them?

Answer 1: There is satellite called SERVIR, which provides data over Africa but its measurements are not advanced as GOES-R or Himawari. ESA will be launching FCI in next few years with similar capabilities as GOES-R.

Question 2: How useful are air quality sensors in a geothermal environment which is indicated by among other factors, high CO<sub>2</sub>, H<sub>2</sub>S and radon gases. Can these gas concentration anomalies be detected ?

Answer 2: We can do CO<sub>2</sub> from satellites but I am not aware of any methods/data about H<sub>2</sub>S and radon gases.

Question 3: AOD calculates with MODIS image has the same inappropriate pixel masking like as GOCI, GEMS or AHI?

Answer 3: Not sure about the questions? What is the inappropriate pixel masking?

Question 4: What method do you recommend to use to adjust the MODIS data for PM 2.5 for Guatemala City, because there is no AERONET platform?

Answer 4: Check out our AOD-PM<sub>2.5</sub> webinar series at <https://arset.gsfc.nasa.gov/airquality/webinars/advanced-AOD-PM>

Question 5: How does AOD correlate with PM<sub>10</sub> and PM<sub>2.5</sub>?

Answer 5: Check out our AOD-PM<sub>2.5</sub> webinar series at <https://arset.gsfc.nasa.gov/airquality/webinars/advanced-AOD-PM>

Question 6: Is there any available satellite data for the North-African Sahara, or which satellites can be used for air quality studies over Middle east ?



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Answer 6: data from polar orbiting satellites such as MODIS, MISR, VIIRS are available globally but Geostationary data over Middle east may be available from Indian satellites - see week 4 presentation.

Question 7: do you think that RGB channel or products is more useful to determine or identify dust or aerosol?

Answer 7: It depends on what you are looking for. Over Sahara, where the surface is bright, RGB may not help you. More channels will be needed.

Question 8: Currently we have a PQ200 ambient air particulate sampler with data of hours, days and weeks, in a point of the city, the most affected by the vehicular fleet, when interpolating these data I would like to adjust them with the data of MODIS, for what method could you recommend me?

Answer 8: If you have data over one station and want to calibrate with MODIS, you can do statistical modeling. It will depend on how much variability exists locally, for example.

Question 9: is there any initiative to have some similar satellite programs like AHI on the Caribbean?

Answer 9: Caribbean is covered by GOES-R and GOES-S and you should be able to find that data. Very similar quality data as AHI. See Session 32 of this series.

Question 10: Is global Carbon dioxide level increasing in oceans? If yes then at what rate?

Answer 10: Not for this series.

Question 11: For the air quality management angle is there any existing project or effort in progress where a remote sensing air emission is directly used in models to determine the impact on sensible areas (or populations) and be adapted to other regions? is that something feasible for a government agency in countries in development right now?

Answer 11: There are several efforts where satellite emission databases have been derived (NASA, NOAA, EPA) does use them in models. NO<sub>2</sub> and SO<sub>2</sub> has been included as well. Many have been used only at the research phase. Not many operationally. Monitoring, yes, but not yet for regulatory purposes.



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Question 12: Is there going to be an assignment for the webinar series?

Answer 12: Not for this series.

Question 13: I have always had problems with the recovery of aerosols because the city throughout the year is quite cloudy and I get few data of aerosol optical depth L2. What could I do???

Answer 13: Unfortunately, that is a problem we have yet to solve. Visible channels are the only ones used currently. Some LIDAR (Calipso) can be used but the spatial extent is limited

Question 14: How can the remote sensing data be used in forming govt policies regarding source specific mitigation?

Answer 14: Example: US EPA and state agencies use Sat data to submit “exceptional event” case studies where states can use the RS data to show AQ transport from another state. Long term data trend analysis can be used to ID hotspots in areas where AQ has been degraded and that can inform policies.