



Questions & Answers Session 1

Please type your questions in the Question Box. We will try our best to get to all your questions. If we don't, feel free to email Amita Mehta (amita.v.mehta@nasa.gov) or Sean McCartney (sean.mccartney@nasa.gov).

Question 1: How is the base period for the mean calculated for the anomaly? Did you use seasonal mean for the 2009-2019 as a base period?

Answer 1: Yes, that is correct, 2009-2019

Question 2: What is the plugin name I should install to acquire the function for downloading csv files?

Answer 2: Plugin name: **MMQGIS**

Question 3: Is there a way to separate snow from GPM value?

Answer 3: Yes, next week we will cover that. Along with data itself, there is an indicator for the probability of liquid phase precipitation (PLPP). If it's less than a certain value, it is snow. If you go to the IMERG data description link, you can find more information.

https://pmm.nasa.gov/sites/default/files/document_files/IMERG_ATBD_V5.2_0.pdf

Question 4: I'm in the Giovanni page, I register, I choose Mozambique, but in the time I cannot choose the season part

Answer 4: It is in the date range section. Please refer to the demo recording (which will be available tomorrow) for an example.

Question 5: Can we import the IMERG product into a hydrological model for further analysis?

Answer 5: Yes, you can. We have done that in a previous ARSET webinar on VIC (Variable Infiltration Capacity) model. The recordings from this webinar series can be found here: <https://arset.gsfc.nasa.gov/water/webinars/VIC18>

Question 6: In which tab will I get plot?



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Answer 6: Once the plot is there, it will show up in the same tab. On the bottom right, you can choose to go back to the Giovanni selection menus.

Question 7: Can you provide options to select in Plot and Date Range?

Answer 7: Yes, in your time series, you can choose different dates and years.

Question 8: Which tool is to be used for drought monitoring?

Answer 8: There is no one single tool. Anomalies is the most common method. Next week we will calculate Standardized Precipitation Index (SPI) to look at meteorological drought. The US drought monitor is a good resource as well:

<https://www.drought.gov/drought/>

Question 9: Trying to plot data from 2000 to 2019 with Giovanni, it responds: "Sorry. The current number of time steps (20 yearly) exceeds the maximum (4) we can process for Monthly and Seasonal Averages. Try reducing your date range. (If you log in, this limit on the number of allowed time steps will be removed.)" Is there a solution?

Answer 9: You are receiving this message because you have not logged into Giovanni. Once you log using your username & password you will be able to process the entire time series of data.

Question 10: Data for other seasons are not in files, do we need them for the homework?

Answer 10: No, you will not need data from other seasons for the homework.

Question 11: Is there a batch download? Or is it all one click per download?

Answer 11: Yes, we will see how to bulk download files in Part 2 of the IMERG training.

Question 12: Is IMERG data available for countries like Haiti, or the Dominican Republic? And can you use that data for forecasting?

Answer 12: Yes, IMERG data is provided globally for the latitudes of 60°N-60°S, while the remaining upper and lower latitudes extending to 90° are considered "partial coverage". IMERG data cannot be used for forecasting, but if you have a model you can use that for forecasting.



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Question 13: Is this mean for 12 months from 2000-2019? I'm asking because I see 13 records.

Answer 13: The mean is for 3 months. The 13 records for Houston is for the 13 counties in the region.

Question 14: Why is the mean used? Is not the median more suitable despite it not being affected by extreme values?

Answer 14: Anomalies are calculated with respect to mean - that is why we have used mean in the demonstration and exercise.

Question 15: Is it possible to calculate Fire Weather Index components based only on remote sensing data (precip, temperature, humidity, wind etc.)?

Answer 15: All these data parameters are available from NASA remote sensing or model data.

Question 16: Can IMERG data be used for tropical areas such as Indonesia?

Answer 16: Yes, IMERG data is provided globally for the latitudes of 60°N-60°S, while the remaining upper and lower latitudes extending to 90° are considered "partial coverage".

Question 17: If I'm interested in applying the data to another region, where can I obtain the shapefile?

Answer 17: If you search the internet you will likely find a site with a shapefile for your region. One example is DIVA-GIS: <https://www.diva-gis.org/Data>

Question 18: What dataset is better to use for surface temperatures (as example for drought monitoring we need not only precipitation but also temperature)?

Answer 18: Land surface temperature data are available from MODIS:

<https://modis.gsfc.nasa.gov/data/dataproduct/mod11.php>

MERRA provides surface temperature as well:

<https://gmao.gsfc.nasa.gov/reanalysis/MERRA-Land/data/>

Question 19: I am in the Part 1: *Plot IMERG Precipitation for Individual Seasons*. I am not so sure whether or not I have to download the .tif file for all the four seasons. Can you confirm?



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Answer 19: You can work through the steps. All the data is also available from a zip file on the webpage. But we encourage going through the steps of data access for your own instruction.

Question 20: Is 20 years of data reasonable or statistically sound enough to be used for the calculation of precipitation statistics and anomalies?

Answer 20: 20 years may not be long enough. 30+ years is ideal for analyzing climatologies.

Question 21: Are shapefiles from <https://gadm.org/> usable for research like this (i.e., accurate enough)? That site would be an easily accessible source for general administrative boundary shapefiles for everyone to use moving forward.

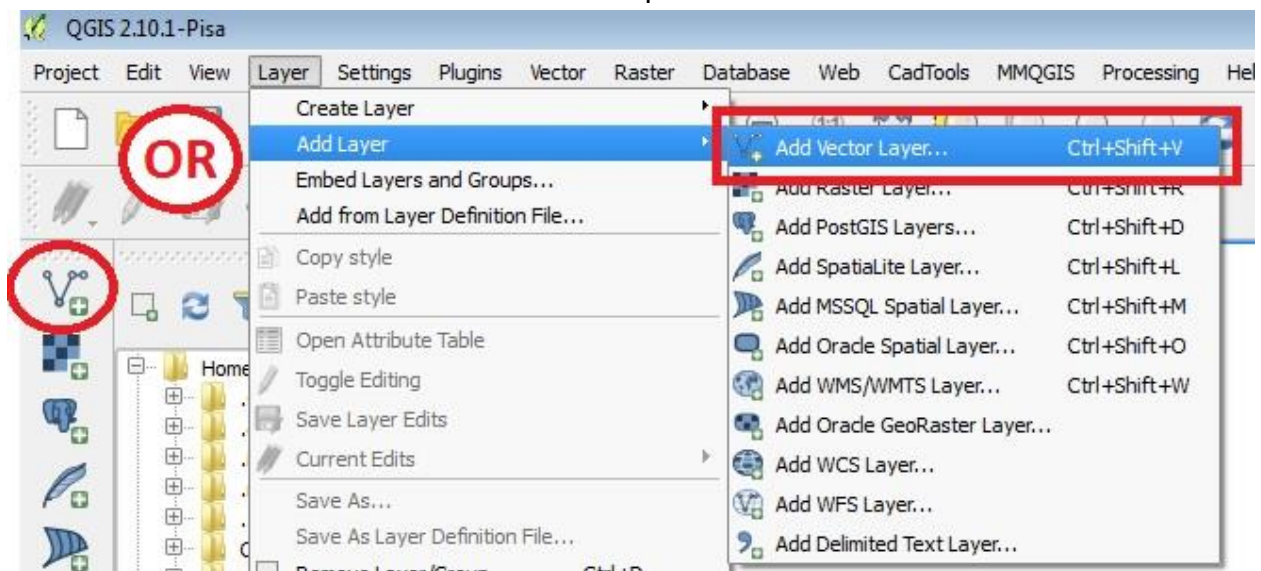
Answer 21: It is to your discretion whether the data is accurate enough for your study area. We have not used this data portal before.

Question 22: What is the spatial resolution of IMERG data?

Answer 22: 0.1 x 0.1 degree. (~10 km²)

Question 23: For Part 2, number 4 of the exercise, we are to Add Vector but I only see buttons that look like that and they say....New Shapefile or New Virtual Layer? Where's the Add Vector button?

Answer 23: The icon is on the left near the top.





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Question 24: Can we use shapefiles to find IMERG V6 data?

Answer 24: If the shapefile you have is not a standard shapefile available in Giovanni then you will have to use a bounding box around the area of your interest to get the data, and in QGIS you can crop it to the shapefile. Or simply use zonal statistics within the shapefile polygons to get statistics.

Question 25: Please review calculating standard deviation in QGIS. I used the GRASS r-series function but the output was not useful. By not useful, I mean that the values were all null, even after changing the data range.

Answer 25: You may have to set your minimum and maximum values before running the r-series tool.