

NASA ARSET Webinar: Water Resources Management Using NASA Earth Science Data (2015)

Assignment 2 (Week 5)

1. Which parameters are useful for monitoring fresh water availability over land?
2. What type of orbit do the following satellites have?
 - a. TRMM:
 - b. Terra:
3. Name the sensors flying on the GPM core satellite:
4. TMI and GMI are active remote sensors.
 - a. True
 - b. False
5. MODIS is flying on:
 - a. TRMM
 - b. Terra
 - c. Aqua
 - d. Landsat
6. Which of the following parameters are **not** directly derived from satellites, but are derived from models?
 - a. Rain rate
 - b. Runoff
 - c. Snow fraction
7. What are the units of:
 - a. Rain rate:
 - b. Runoff:
 - c. Snow fraction:
8. Which sensor would be more useful to measure snowfall rate over northern Europe in January?

- a. TMI
 - b. PR
 - c. DPR
9. This data access tool does not provide data visualization capability:
- a. Giovanni-4
 - b. Mirador
 - c. PPS-STORM
10. This tool allows users to get GeoTIFF images of remote sensing or model data:
- a. Giovanni-4
 - b. Mirador
 - c. STORM
11. Soil Moisture Active Passive (SMAP) provides surface and root-zone soil moisture.
- a. True
 - b. False
12. Jason-1 and -2 measurements are used to derive: (circle all that apply)
- a. soil moisture
 - b. lake height
 - c. vegetation index
 - d. terrain height
13. List one website URL where reservoir height data is available:
14. What is the spatial resolution of:
- a. The MODIS ET product:
 - b. The Landsat ET product:
15. GLDAS and NLDAS models use remote sensing data for model forcing.
- a. True
 - b. False
16. The SMAP mission provides soil moisture measurements at higher spatial resolution than GLDAS.
- a. True
 - b. False

17. What is the unit of water thickness data measured by GRACE?
18. What is the spatial resolution of GRACE-based ground water data?
19. MODSCAG refers to a MODIS-based snow product.
- True
 - False
20. What is the range of Normalized Difference Vegetation Index values?
- 1 to 10
 - 1 to 1
 - 0 to 100
21. GRACE is ideal to track ground water flow.
- True
 - False
22. This data site is useful to get 1) MODIS snow cover, and 2) SMAP soil moisture data.
- MIRADOR
 - NSIDC
 - GIOVANNI
23. Go to [this link](#) showing lake height variations of Lake Powell in the western U.S. The bottom panel shows the smooth version of the time series of relative lake height values of Lake Powell. Which year had the most negative value?
(http://www.pecad.fas.usda.gov/cropexplorer/global_reservoir/gr_regional_chart.aspx?regionid=wussw&reservoir_name=Powell)
24. Go to the Global Flood Monitoring System website (<http://flood.umd.edu/>). Find the map showing 'streamflow at 12 km.' What is the range of streamflow values shown in the color bar?
25. Go to [this link](#) and list the surface freshwater components you see under the 'variable name.' (http://giovanni.gsfc.nasa.gov/giovanni/-service=TmAvMp&starttime=&endtime=&bbox=-180,-90,180,90&dataKeyword=NLDAS_VIC)