

Q: Good Afternoon, Will the Webinar be recorded?

A: The recordings are available here:

<https://training.eumetsat.int/course/view.php?id=404>

Q: What type of scanner is being used is it Pushbroom or Whiskbroom scanners?

A: In this case a scatterometer is used. A scatterometer is an active satellite instrument, i.e. it actively sends out a signal (in case of ASCAT a microwave signal), this is then reflected by the Earth surface. The way it is reflected depends on the characteristics of that surface at the moment it is hit by the signal and thus can be used to measure surface conditions, such as winds, waves or (as here) surface soil moisture.

Q: Normally In the ITCZ zone we have massive cloud cover , How to deal with this when your observing soil moisture in these areas?

A: The soil moisture observations used are from scatterometers. The signal send from the satellite and reflected by the surface passes through clouds. So in this case, clouds are not an issue.

Q: Have you considered using land surface temperature in your work? Do you see any potential in using land surface temperature in operational estimation of soil moisture?

A: For the production of H141/H142, screen-level temperature obs (at 2 m height) are assimilated, but not soil temperature. The main reason is that 2m temperature obs are much more widespread than soil temperature and they can be retrieved directly from the SYNOP network (tens of thousands per day). Unfortunately soil temperature (like in situ SM obs) is very sparsely observed and sometimes less well quality controlled than 2 m temperature. However, In the future we will be looking to make soil temperature a prognostic variable in the SEKF, which should improve the flow-dependence between the soil moisture and soil temperature variables.

Q: According to your analysis David , Why is the warming trend not apparent lower latitudinal countries like the ones in Indian Sub continent , Conditions in the Indian Sub continent still appear wet despite half the country being in the sub tropical zone . Is Climate change not apparent out here?

A: Climate changes happens everywhere on Earth, but not everywhere in the same way. While in some regions a drying trend is observed, other regions get wetter. I would assume that in India changing monsoon conditions play a role as well as more frequent and intense tropical storms. You are very welcome to use this data record in combination with other data records to have a closer look at India, to identify and understand the processes there.

Q: How interesting trends look in Poland? Can you comment?

A: A linear trend for the time series 1992 - 2020 is shown here:
<https://padlet.com/TrainingEUMETSAT/egb24uoioqmisuuw> However, the patterns of the plot are not yet fully analysed. Of course you are welcome to comment as well.

Q: Can we play with CMSAF toolbox with the other input formats? (Grib2 for example?)

A: The R Toolbox is designed for NetCDF data. CDO (Climate Data Operators) offer some options to convert data to NetCDF. Maybe that's an option.

Q: Would you please attach the link to the toolbox?

A: www.cmsaf.eu/R_toolbox

Q: Can this be available in GITHUB?

A: I'm using the EUMETSAT GitLab for the development of the cmsaf R-packages. If you want to contribute, we probably can arrange access.

Q: Is it possible to extract a specific area of a country e.g. Gotland, if yes? How?

A: 'Plot region' allows the usage of own shapefiles or predefined countries.

Q: Would you please show the syntax written in the R studio for calling the toolbox?

A: `cmsaf::run_toolbox()`

Q: You were created time trend for Frankfurt (the nearest pixel). Is it possible to create it for a box of pixels (3x3 for example) defined by number of lines and columns? Getting maximum or mean of this box? Probably it is not a shapefile.

A: Good question! Never tried it. I implemented some 'Grid box statistics', where you can define the size of grid boxes.

Q: It seems that I have a problem with using of CM-Saftoolbox. What is the minimal configuration required? It probably hangs and automatically closes the window. I have Win 3.6.3 R version installed. And call from R Studio 1.2.50033 version.

A: An R version of 4.0 and higher is recommended to install the latest version of the cmsaf R-package (3.1.0).