

SALGEE General Discussion

21 March 2013, Lisbon/Ericera, Portugal



Overview

1. Implementation of some recommendations from the General Discussion of the 2nd SALGEE WS, 6 April 2011, Antalya, Turkey [/SALGEE Secretary overview/](#)
2. SALGEE General discussion: needs & perspectives in on biogeophysical operational analyses, 21 March 2013
 - Discussion on WS topics
 - Training activities
 - Partnership
 - Scope and place of the next workshop



**Implementation of some
reccommendations from
SALGEE General Discussion
*6 April 2011, Antalya, Turkey***

/SALGEE Secretary overview/

Recommendations from 2nd SALGEE WS *on WS Topics*

Validation activities of FIR product.

- Presentation of study in the 3rd WS by Turkey.
- The last MPEF FIR version is from 2009.
- The focus was given to comparative studies on different fire detection products: Presentations of studies in the 3rd WS by Italy, Bulgaria.

Step by step to enlarge the SALGEE WS scope.

FRP is a main topic broadly considered in the 3rd WS as well as others LSA SAF products

To give more attention to drought assessment by using ET and other LSA SAF products, considered together.

Bulgaria reported such studies in the 3rd WS on using LST, ET, FVC, FRM products. Regional applications reported by Ukraine, Armenia.

Reccommendations from 2nd SALGEE WS on *FIR Validation*

Validation activities of MPEF FIR product and feedback to EUMETSAT.

EUMETSAT was provided with a list of locations of thermal anomalies repetitions, which are not confirmed by ground observations over Bulgaria in 2011.

To start working on recommendations about MPEF FIR validation methodology among EUMETSAT and countries using the product.

The last FIR version is from 2009.

To consider possibilities for new validation sites at different geographic regions and consider all parameters together.

TBD

Reccommendations from 2nd SALGEE WS on *Operational use and applications*

EUMETSAT to consider the possibility to update software in order to process & visualize some LSA SAF products to be installed on DAWBEE stations.

Is there any decision on initiation of DAWBEE next phase? TBD

Reccommendations from 2nd SALGEE WS on *Partnership*

DAWBEE is a possibility for regional partnership, reports on validation products in future WSs and any other forums, where SALGEE can report progress.	Is there any decision on initiation of DAWBEE next phase? TBD
To consider the possibility for collaborative projects on these and other related problems.	TBD
Other DAWBEE countries (Moldova, Belarus) might be involved in SALGEE.	TBD
Web site of SALGEE to be developed.	The first version appeared. TBD
SALGEE participation in EU initiative in Forest fire management .	TBD

Reccommendations from 2nd SALGEE WS on *Training Perspectives*

Preparation of Drought & Fire illustration materials: Case Studies over different geographical regions.

Developed by Bulgaria with the support of EUMETSAT, presentations in the 3rd WS and uploaded in the SALGEE Web site.

Training can be performed trough regional partnership. For DAWBEE countries, if software for LSA SAF products could be provided additional special training could be given.

Is there any decision on initiation of DAWBEE next phase? TBD

The visualization procedure could be included as a topic in the training activities. MSG view software developed in Turkey can be useful.

Presentations of studies in the 3rd WS by EUMETSAT and Turkey.

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Aim of SALGEE2013 Discussion

Julia Stoyanova:

- We have prepared a short analysis on the implementation of the recommendations from the 2nd SALGEE Workshop that will be published in the Moodle Web page.
- At the time of organizing the 1st SALGEE Workshop we have started as beginners in using satellite information for Land Surface Analysis. The main aspect of our interest was drought and fire detection, which reflects a wide range of biophysical processes because they combine energy-, water-, and carbon cycles on the land surface. Efforts were also directed to the validation of different editions of MPEF FIR product.
- Now, we extend the scope of the WS, including LSA SAF FRP as a tool for fire detection as well as because knowledge on it have role a in climate and environmental matters.
- Regarding fire validation studies we use MODIS data as a reference and have already established very good relation with NASA. It would be a good possibility if we have MODIS FRP operationally available.
- Drought assessment in an operational regime is of a very importance for variety of applications. Countries like Armenia, Ukraine have concentrated their efforts in drought effects in agriculture. Each country has own approaches, human and technological recourses and there is a need for collaboration at different levels.

Aim of SALGEE2013 Discussion

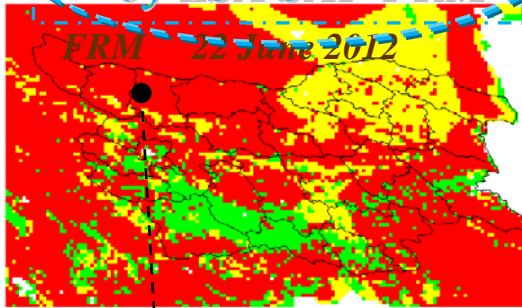
Julia Stoyanova

- One of the the main responsibilities of SALGEE is to give feedbacks to product developers, EUMETSAT and LSA SAF from using LSA SAF products. The validation of products for detection of thermal anomalies (although it is not easily to define and establish relevant methodology) is not a complicated task since the validation question is a matter of “Yes” or “No” detection.
- On the contrary, the validation of drought, FRM, ET products, FRP, etc. is a very complicated task and needs for a specific research approach for development of a relevant scientific concept. As examples, the next two slides illustrate our studies for evaluation the behavior of FRM forecasts and the diurnal course of ET product for the region of Bulgaria. Much work is needed in order to make conclusions about the performance of such products even for specific climate conditions and single case studies.
- For that reason I would suggest that for achieving an effective validation, more close relations between developers and users should be established. A small bilateral research projects might be proposed. Common efforts should be directed to find cross points for application in any EU projects.

With these my comments and having in mind the topics put in the Moodle Forum for the general SALGEE discussion, please for your suggestions and comments.

Validation of LSA SAF FRM product forecasts

Overestimated fire risk
by LSA SAF FRM

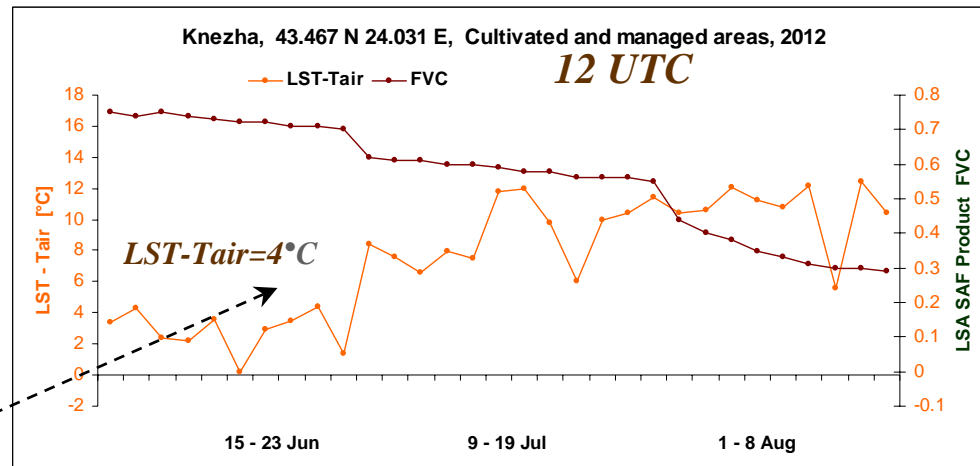
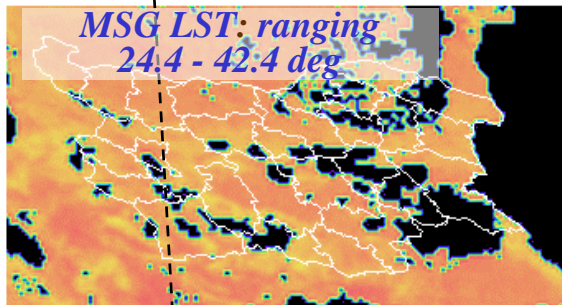
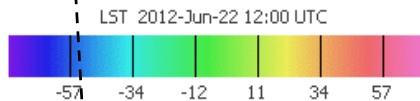


22 June 2012, Eastern Mediterranean region

- early summer, synoptic Knezha, 43.467 N 24.031 E
- $T_{air}=34.7^{\circ}\text{C}$, $RH=23\%$

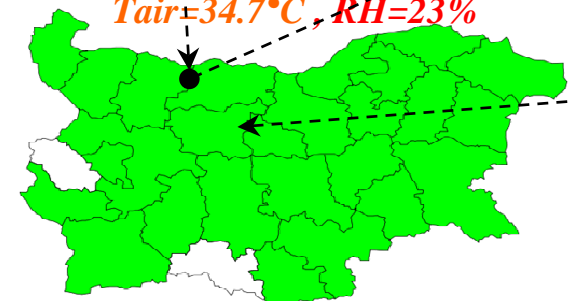
• FRM overestimates fire danger due to the weather extremes ($T_{air}=34.7^{\circ}\text{C}$, $RH=23\%$).

15 Jun – 8 Aug trends of:
• MSG FVC (brown line).
• MSG LST-Tair (orange)



FIRE RISK INDEX

$T_{air}=34.7^{\circ}\text{C}$, $RH=23\%$



22.6.2012 18UTC

No forest fires reported by State Forest Agency /SFA/

- Fire danger is not confirmed by the SVAT model-derived Fire Risk Index, which indicates low risk (green).
- MSG data do not provide signals for vegetation water stress: $LST-T_{air}=4^{\circ}\text{C}$ and $FVC > 0.7$.

Needs from evaluation of LSA SAF ET diurnal cycle

		Ivailo	Dbrich	Lovech	Plovdiv	Knezha
120712	0	0	0	0	0	0
120712	3	0	0	0	0	0
120712	6	0	0.21	0.18	0.16	0.16
120712	9	0	0.42	0.33	0.31	0.33
120712	12	0	0.39	0.33	0.32	
120712	15	0	0.18	0.2	0.18	0.34
120712	18	0	0	0	0	0.2
120712	21	0	0	0	0	0

		Ivailo	Dbrich	Lovech	Plovdiv	Knezha
120803	0	0	0	0	0	0
120803	3	0	0	0	0	0
120803	6	0.02	0.29	0.16	0.11	0.17
120803	9	0.05	0.14	0.31	0.23	0.39
120803	12			0.27		0.37
120803	15	0.02	0	0.16	0.06	0.12
120803	18	0	0	0	0	0
120803	21	0		0	0	0

Send by Forum session of 3rd SALGEE2013
14 March 2013

Dear Colleagues, the following topics for the general SALGEE discussion are announced:

- Comparative analyses of FRP product and other fire detection algorithms
- Climate of fires and fire emissions as detected by different satellite algorithms
- Strengthening the relations between product developers and users especially for assessment of complex phenomena like drought
- Validation of drought related LSA SAF products for operational use needs establishment of international research cooperation on these problems
- Possible collaborations for validation and exploration/promoting the added value of: *1. FRM product, accounting for land surface (functional and structural) state; 2. ET diurnal cycle.*
- MODIS FRP product to be distributed via EUMETCast
- To extend training on biogeophysical issues using possibilities of distance learning technologies
- To search possibilities for bilateral projects, for EU funded Projects, etc

Your comments and suggestions are welcome.

3rd SALGEE 2013

Discussion

Luis Pessanha:

- During our discussion with Lothar Schueller he said he is surprised how high quality validation studies are performed by some users. We agreed to include in the LSA SAF operational environment results on the use of our products by such users. Therefore it will be very welcome to include in the documentation of LSA SAF some validation reports .
- There is an understanding that using satellite FRP products is the only one objective way to estimate carbon fire emissions and the limitations of the different products are known. The proposal to include the MODIS FRP product in the EUMETCast data flow needs financial support and a special procedure to be implemented in EUMETSAT Secretariat and Council decision that will take time. A good way to take these data is to use an FTP transfer.
- In Agriculture, working in terms of Growing Degree Days (GDD) concept they have their own models and these models should include satellite information by LSA SAF. We are depending on weather the agriculture community consider the satellite information useful. In the view of GDC, using LST is a better approach but there are some limitations due to lack of information in case of cloudiness and low temperature during winter, so they need to know how to use LSA SAF products.

3rd SALGEE 2013

Discussion

Valerio Tramotoli:

- In addition to the recommendations from the users of products, the community of product developers need to give recommendations to EUMETSAT .
- There are problems in reprocessing SEVIRI data, especially re-sampling procedure at the EUMETSAT Ground Segment. This procedure is relevant for the products as Cloud Mask, which is used for meteorological purposes. For other applications as for generation Fire detection products products this is not useful and needs to be improved.
- The method for generation MPEF FIR product do not obviously correspond to the level of the possible quality, which can be obtained based on SEVIRI data. We expect EUMETSAT to improve their FIR algorithm.
- Methods on using satellite data are developed mainly at EUMETSAT, but the national institutions and private bodies should also been involved in this process.
- SALGEE could recommend the EUMETSAT Data Policy to made data easily accessible for the users.

3rd SALGEE 2013

Discussion

Luis Pessanha:

- During the last time we are changing the LSA SAF system, especially the archive and the data distribution units.
- Regarding the Cloud Mask, the problem is the applicability of a single product for different applications. We consider to build our own Cloud Mask product for LSA applications.
- There will be a new Crop Production LSA SAF product that could be useful.
- There are H SAF products of interest for us: Precipitation, Snow (which was before a LSA SAF product) and Soil Moisture (SM). The LSA SAF Evapo-transpiration product is included in some way in the H SAF SM product. LSA SAF is only one of the SAFs and we could cooperate with the other SAFs.
- The reprocessing of SEVIRI data is a necessary step in order to correct any wrong geolocation.

Valerio Tramotoli:

- Regarding the reprocessing, the problem is not in the geolocation but that after the re-sampling important information can be lost. The best way to solve this problem is the user community to have access also to the raw data .

3rd SALGEE 2013

Discussion

Martin Wooster:

- The operational system of EUMETSAT is developed especially to supply data for meteorological applications and some of the generated kinds of data and fields can not be useful for other applications as fire detection. I believe that the MTG programme (especially the special fire channel is planned) will give the opportunity to solve such kind of problems including the implementation of adequate reprocessing procedures.

Jochen Kerkmann:

- Regarding 3.9 channel, it was designed for cloud detection and really its use for fire detection is a secondary task.
- Many different kind of questions are directed to EUMETSAT but SALGEE is financed by the Training Division budget with the aim to gathering experts to exchange experience in generation and use of satellite data and products for Land Surface applications. So, to discuss here data reprocessing and Data Policy is useless because your ideas will not reach the right responsible EUMETSAT units. It is useful to discuss now products validation, quality of the products, MTG issues.
- I would recommend LSA SAF to use our training instruments for promotion the products at LSA Web site, EUMeTrain site, EUMETSAT Training Page.

3rd SALGEE 2013

Discussion

Jose Prieto:

The EUMETSAT Data Policy gives opportunity to use raw data for research purposes. There are a lot of products, which are delivered for free including the LSA SAF Products.

Valerio Tramotoli:

We do not criticize EUMETSAT for bad preprocessing. We as a part of the user community would like to recommend ways for improving data quality. Re-sampling is a problem for some applications.

Luis Pessanha

- We need to establish a close relationship between researcher and operational activities . Using MODIS data is the best tool for validation our fire products and we can try to facilitate access to these data.
- LST is one of the most important of our products and the users need to improve our knowledge how to use it. It can be useful as an indicator for soil moisture state and freezing for agricultural and road management applications.

Julia Stoyanova

- LST is very useful parameter for drought assessment. We have used it in our validation study of drought.

3rd SALGEE 2013

Discussion

Erdem Erdyn:

We have tested LST as a parameter for diagnosing freezing of agriculture crops.

Julia Stoyanova:

In using satellite data for land surface analysis, there are cross points with other applications but instead of going to cooperation with other SAFs (such as H SAF Ocean and Ice, etc.) let us try to improve the relations between us, involved in LSA SAF data.

Jose Prieto:

The SALGEE group supports LSA SAF by establishing connection between experts aiming to help the development of satellite products and improving the use of such products. Actually all we are SALGEE and should be in close contact by different ways: By SALGEE Moodle page, by participating in the LSA SAF Workshop in June and the EUMETSAT Conference in September. You can also subscribe to SatRep online.

Ibrahim Somez:

I was surprised by the results of Bulgaria in using FRP product. Other aspect is drought assessment and for that purpose H SAF Precipitation products could be also considered .

3rd SALGEE 2013

Discussion

Luis Pessanha:

The Precipitation products generated by H SAF and distributed operationally have some limitations.

Christo Georgiev:

The priority of our Group is using satellite data in LSA and SALGEE activities should be mainly focused on application of LSA SAF products.

Martin Wooster:

As a representative of the product developers, I confirm that we are interested to have validation reports from the users, because usually we validate our own products. That is why we were very glad to hear their presentations during this Workshop.

Wilfrid Schroeder:

Most of the science groups issued articles, but there is a sense also reports on the use of satellite data that are not published to reach you. We can find a common area to overlap our efforts. This could be the link between different satellite LSA products as Fires, Evapotranspiration, LST.

Luis Pessanha:

We could established a dedicated site for exchanging results of our studies.

3rd SALGEE Recommendations

Discussion

Wilfried Shrioder:

This is useful to start such an activity.

Julia Stoyanova:

- In preparation of the next SALGEE we will need two years for working. Now the time was shortened and this complicated the validation research as well as the organization work.
- For the next WS, NIMH Bulgaria will continue work on:
 - ✓ Validation studies on FRP product and some climate related issues.
 - ✓ FRM product: validation and improvement by considering FVC and other land cover characteristics.
 - ✓ To give more attention to drought assessment by using evapotranspiration (ET) and other LSA SAF products, considered together (LST, FVC).
- All materials from the WS will be posted in the Moodle page.

Jose Prieto:

Thank you all participants for the useful discussion and in the afternoon we will proceed with the Program. Please give your presentations to Christo Georgiev. A DVD will be issued by EUMETSAT and received after request from participants.