



VLab Newsletter

WMO-CGMS Virtual Laboratory
for Education and Training
in Satellite Meteorology

http://cgms.wmo.int/CGMS_virtualab.html
<http://www.wmo.int/pages/prog/sat/>

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Meryem Uz, EUMETSAT, Editor

CGMS-37 in Korea

CGMS-37 took place from 26 - 30 October on Jeju Island in Korea. The VLab Co-Chair Volker Gaertner from EUMETSAT participated and presented the VLab training activity report (WMO-WP-18) which was well received by CGMS members. It highlighted the most important developments since CGMS-36, such as the CBS approval of the five-year VL strategy, the recognition of new Centres of Excellence (CoEs) in Pretoria, South Africa and in Moscow, Russian Federation, the appointment of the VL Technical Support Officer (TSO) and the summary of the annual reports from the CoEs and sponsoring satellite operating agencies for the period from September 2008 to April 2009. NOAA's delegation confirmed the funding of the TSO for the year 2010. Furthermore, they offered that COMET's ESRC be part of the WMO VLab Virtual Resource Library. The report also gave an outlook about future plans and activities.

An Environmental Satellite Resource Center

The COMET® Program in Boulder, Colorado has developed an Environmental Satellite Resource Center (ESRC; <http://www.meted.ucar.edu/esrc>). This searchable, database-driven, free Web portal provides easy access to a wide range of useful information and training materials on both low-earth and geostationary orbiting environmental satellites as well as their associated instruments, applications and products. The ESRC, primarily sponsored by NOAA's NPOESS and GOES-R programs in the U.S., is a community-populated database in which organizations and individuals around the globe can easily submit resources via simple online forms. These submissions are quality-assured by COMET staff before becoming available to the public through the ESRC, yielding a focused, accurate set of resources. As of September 2009, the ESRC contained hundreds of entries including international information. Resources are available at all education levels and currently in 15 different languages. The ESRC also improves access to the numerous satellite resources available from COMET's MetEd Website (<http://www.meted.ucar.edu>) by including extracted, satellite-relevant components from their wide array of learning modules. COMET will continue to populate the ESRC with future learning modules to offer the most up-to-date information possible.

The ESRC can be a very useful international resource for WMO Virtual Laboratory users. It is not a repository of materials, and it is not meant to have the same role as the Virtual Laboratory Centres of Excellence Websites. The ESRC is a portal to the wide range of useful materials that exist at many sites offering environmental satellite information and training including links to the resources offered by each of the Virtual Laboratory Centres of Excellence. Thus, the ESRC helps a broad international audience to find those CoE and satellite operator sites and their individual resource collections. Although the use and submission of resources to the ESRC were planned to be as simple as possible, user registration is required. The registration system allows the collection of basic user statistics, which is needed to improve the service and to supply the sponsoring agencies data about usage. It also allows you to edit the existing entries in order to make changes and updates. The same registration account used to log on to access the ESRC can also be used to

access all the MetEd resources available, so you may already have the necessary account if you use MetEd modules.

It is hoped that each Centre of Excellence will use and submit resources to the ESRC and maybe, even provide a link to the ESRC on its Website. This would be an advantage for the Virtual Laboratory and the related user communities.

(Article contributed by Pat Parrish, COMET and Luciane Veeck, VLab TSO)

Roshydromet's VLab website

The rapid development of science and technology is accompanied by ever faster growing knowledge that is required for a modern specialist. It is sometimes getting difficult to navigate through the vast information resources. Roshydromet's Virtual Laboratory website aims to convey recent achievements in satellite meteorology to each person concerned, and thereby to raise their level of competence. The online resource can be used as support material for education, training and professional development of specialists in the field of hydrometeorology and related sciences. The main goals of the Virtual Satellite Laboratory are to provide wider access for Roshydromet specialists, students and postgraduates as well as for specialists in other areas of activity to techniques and technologies for satellite information processing, to make more efficient use of satellite products and to fulfill Roshydromet's international obligations.

The Virtual Laboratory is integrated with the existing technological structure at Roshydromet and hosted on the technical resources of its main data center. The site is available at: <http://meteovlab.meteorf.ru> and currently contains 20 lectures grouped by 15 topics.

The audiovisual training materials are developed by leading scientists and specialists at the Advanced Training Institute of Roshydromet and the Russian State Hydrometeorological University (St. Petersburg). The site also contains some Russian translations of the lectures originally prepared for English-speaking segments in the network of the WMO Virtual Laboratory for Satellite Meteorology and presented by leading foreign scientists. In addition to training materials extensive reference materials, university curricula and programmes in satellite meteorology, electronic textbooks, articles and other information useful for the educational process can be found as well on the Roshydromet VLab website.



Practical problem-solving and tests are offered to complement theoretical knowledge. Experience has shown that the best results are obtained by a combination of electronic and traditional learning when students learn the theoretical part of the programme with the help of distance learning methods, while practical exercises are carried out face-to-face with the teacher.

The use of distance and online learning should significantly improve the quality of education, training and professional development of specialists in the field of hydrometeorology and related sciences. The Virtual Satellite Laboratory should be considered as part of the wider hydrometeorological education portal.

(Article contributed by G.N. Chichasov., D.N. Martinovsky., N.V. Pashkova, Roshydromet)

Remote training session “On the Imagery of 3.8 μm Channel” at the Bureau of Meteorology Training Centre

A VISITVIEW remote training session (Virtual Laboratory) titled “On the Imagery of 3.8 micron Channel” was presented by the Japan Meteorological Agency on 18 June 2009 during the Australian Bureau of Meteorology Training Centre Advanced Forecasters Course. The audience consisted of 25 course members, including forecasters from various Bureau of Meteorology Regional Forecasting Centres and representatives from the Royal Australian Navy, New Zealand Meteorological Service and the China Meteorological Administration.

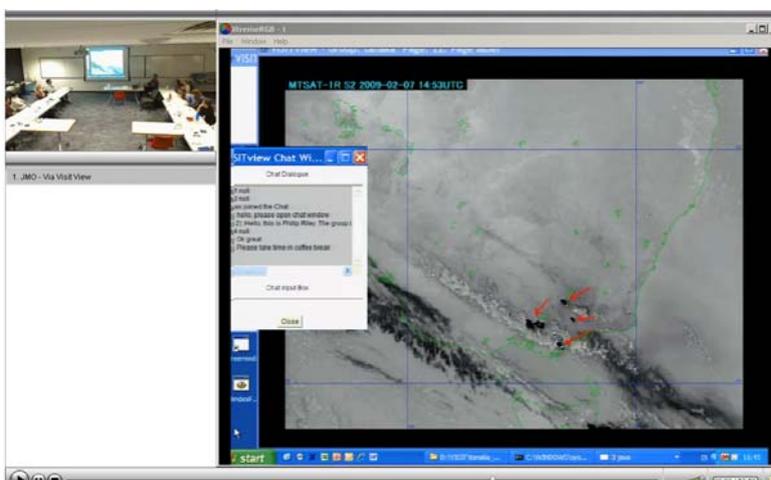
The lecturer was Mr Yoshiro Tanaka of the Forecast Division of the Japan Meteorological Agency. Although VISITVIEW has been used at the Bureau of Meteorology Training Centre, Mr Tanaka had not used this previously. Despite this the lecture proceeded smoothly, material on the slides was clearly presented and the presenter's discussion was easy to follow. The lecture was well structured, initially introducing the basic physics of the 3.8 micron channel and comparing its performance in monitoring water and ice cloud with the 11 micron channel.

To make the lectures relevant to the audience, Mr Tanaka chose Australian examples to demonstrate the usefulness of the 3.8 micron channel of MTSAT. One example pertained to an extensive episode of overnight fog and low cloud over central Australia on the 1 June 2009. The other example made news in Tokyo, and this was the catastrophic bushfires over south-eastern Australia of early February 2009. The 3.8 micron channel is more responsive to warm sub pixel area than 11 micron channel. Therefore, fire hotspots clearly show in night-time 3.8 – 11 micron imagery. Displaying enlarged images helped to emphasise the detail in these features.

From time to time the lecturer prompted the audience during the lecture and this interaction was appreciated. Unfortunately, as there was only one microphone at the front of the BMTC lectern, it was difficult for the participants to prompt for clarification during the presentation. Therefore, for practical reasons audience questions were left for the conclusion of the lecture.

A few questions were posed. Of particular interest for the reviewers current research concerned the relative signal strengths of the 3.8 – 11 micron signal from nocturnal fog or low cloud over land compared to adjacent maritime regions. Mr Tanaka indicated that the larger cloud droplets in the maritime cloud would result in a weaker temperature signal.

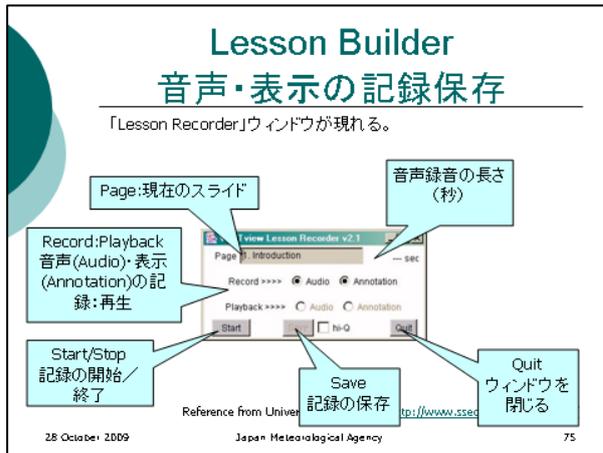
Overall, it was an informative and successful lecture. The post-lecture survey showed favourable feedback, with many of the participants finding the material useful. For future reference the VISITVIEW session was recorded using Camtasia Screen Recording. This has been archived in the “Advanced Forecaster Course 2009” link on the Bureau of Meteorology Training Centre Internet page.



Screenshot of the session from the Camtasia Screen Recording shows the students participating at the Advanced Forecasters Course at the Bureau of Meteorology Training Centre. It also shows a part of Mr. Tanaka's lecture, pertaining to the detection of bushfire hotspots by the 3.8 micron imagery over south-eastern Australia, as indicated by the red arrows and the VISITVIEWchat window.

(Article contributed by Bodo Zeschke, Bureau of Meteorology Training Centre, Melbourne, Australia)

VISITview manual translated into Japanese



In order to facilitate the utilization of VISITview tools, especially for lecturers on satellite meteorology, data and products, a VISITview manual (MS PowerPoint format) was prepared in Japanese. This manual reflects author's experiences such as tips for online training. The manual will be helpful for JMA staff to produce VL materials (VRL) and carry out online trainings in the future.

The English version can be found at:

<http://www.ssec.wisc.edu/visitview/>

(Article contributed by Akihiro Shimizu, Japan Meteorological Agency)

Satellite products for land applications course in Maputo, Mozambique

The first Land SAF course in Africa took place at the premises of the National Institute for Meteorology (INAM) from 2 – 6 November 2009 in Maputo. This training event was initiated by the Instituto de Meteorologia, (IM) in Portugal, in cooperation with INAM in Mozambique. EUMETSAT supported the event financially and technically. The course was given high prominence in the local newspapers and on TV. The course was targeted at technicians working on the environment, hydrological resources, agrometeorology and forestry, in particular, through the knowledge of monitoring indices for vegetation stress. The main purpose of the course was to spread knowledge of land applications of data from Meteosat and polar orbiters, with an emphasis on the a practical approach.



Group photo: Participants and lecturers

The course had an important interactive component. The materials were uploaded to the CPTEC Moodle server before the course. A dedicated internet connection was hired and reserved for the PCs in the classroom. Saba Centra teleconference software ensured a very high quality for voice and visual interactions during the presentations from remote lecturers. The participants interacted and responded to the quiz by sharing a remote application on fires, opened at the presenter's computer during the lecture. This is an example of desktop sharing which spares the installation effort with the student's computer.

In total there were 20 participants from Portuguese speaking countries (Cape Verde, Sao Tomé y Príncipe, Guinea Bissau and Brazil) and five lecturers from the Land SAF (IM, Portugal), Institute of Geo-Information Sciences & Earth Observation (ITC, Netherlands), CPTEC (Brazil), INMET (Brazil) and EUMETSAT. The remote sessions were given by presenters from IM and CPTEC. There is a general expectation that the series of IM events in Africa should continue next year in another country, perhaps in Cape Verde.

Isabel Trigo, the course director, expressed satisfaction with the impact of the course and the participants' wish to see a continuation in 2010 with additional topics included. The course evaluation was conducted through Webropol. The overall feedback can be summarised from the participants' perspective as very positive, especially regarding the practical and interactive aspects.

(Article contributed by Jose Prieto, EUMETSAT)

Virtual Laboratory in the Classroom

The Caribbean Institute for Meteorological and Hydrology (CIMH), as a Centre of Excellence in the WMO-CGMS Virtual Laboratory for Training in Satellite and Meteorology (VLab) programme, utilizes a variety of very valuable online materials and software provided by the Virtual Library. The main tools used from the Virtual Resource Library are the online training modules and lectures on various meteorology and related topics. CIMH is also in the process of developing its own training modules for regional use in a Continuing Professional Development Series. CIMH's lecturers regularly make in class use of the VisitView Program for displaying satellite images and weather charts in the meteorology lectures. The programme allows graphical manipulations that would have been tedious in the past. The versatility of the programme also allows for online presentations such that the classroom is not limited to a physical space.

As an introduction to the forecasting experience the 2006-2007 and 2008-2009 Senior Level Meteorological Technicians' course, students were afforded the opportunity to interact with operational and experienced forecasters via online VisitView Focal Groups and the Caribbean Weather discussions. The objective of the sessions was to allow the students to view satellite images in terms of operational usage and go beyond looking for specific systems as they will see in a class room setting. Feedback from experienced forecasters gave the students immediate responses to questions as well as gave them some insight into the peculiarities of regional weather.



Sheryl Etienne La Blanc, forecaster trainee (SLMT 2008-2009) preparing for the day's briefing during Forecast Office simulation exercises.

These would have included island effects, frontal intrusions into the Caribbean and the effects of cross equatorial flow patterns (at all levels) as they exist in Guyana.

During the Senior Level Meteorological Technicians (Forecasters) course the first sessions were primarily intended as discussion, followed by question and answer sessions. Towards the end of the course, during the forecast office simulation (FOS) exercises the students conducted their own weather briefings and took part in the discussions and presented their analysis and forecasts.

On leaving CIMH the new forecasters are encouraged to join the online discussion groups, which allows for the continuity and ensures growth of the VLab programme in the region.

(Article contributed by Kathy-Ann L. Caesar, Caribbean Institute for Meteorology and Hydrology)

Satrep Online

Satrep Online was developed in 2007 as a product of the international training project EUMeTrain. This project is funded by EUMETSAT and has its goal to increase the knowledge and use of satellite data. The Satrep Online is an online training as a capability that offers four times a day at 00:00, 06:00, 12:00 and 18:00 UTC the latest set of Meteosat satellite images in combination with a range of basic and derived ECMWF parameters. It thereby offers users the opportunity to operationally analyse a satellite image using the Satrep method. Satrep Online attracts hundreds of visitors per day offering them an easy to use, free tool over the web in which they can look at a range of satellite images and products in combination with NWP parameters.



Satrep Online Today's images

In the Satrep method the forecaster recognises cloud patterns and structures by means of Conceptual Models. Conceptual Models are the fingerprints of the atmosphere and explain the appearance of clouds in the satellite image, the physical background and most important the weather events associated with them. If the forecaster does this analysis of a satellite image in conceptual models correctly it will help him to achieve a 3d or even a 4d view of the state of the atmosphere. It can also help him to verify the NWP model performance.

In general, the satrep method makes the use of satellite imagery, in combination with NWP data more effective. Training in the use of the satrep method is provided online by means of weather briefings.

These briefings take place every month and everyone who is interested can participate free of charge. During the 2009 CALMET conference in St. Petersburg Satrep Online was introduced to a large audience. The product, the method and the possibility to train the meteorologist by means of weather briefings raised the interest of the South African delegation (SAWS). SAWS expressed their willingness to develop a similar product for the South African Continent. With the full support of WMO Virtual Laboratory the South African Satrep Online will become operational in 2010.

(Article contributed by Jarno Schipper, ZAMG and Vesa Nietosvaara, FMI)

Next web meeting(s) of the VLMG

The next web meetings will be held on 22nd and 24th February 2010. In the meantime, the VLMG members can use the different fora on the VLab Moodle site for discussions.

Note:

The VLab Newsletter editor would like to thank to those colleagues who have contributed to this newsletter with articles, information and their feedback. We would welcome your comments on this Newsletter and would appreciate contributions to future editions. If you wish to contribute to the next edition on training activities or other areas of the VLab please contact: meryem.uz@eumetsat.int and luveeck@gmail.com

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