

EUMeTrain project

2020 perspective

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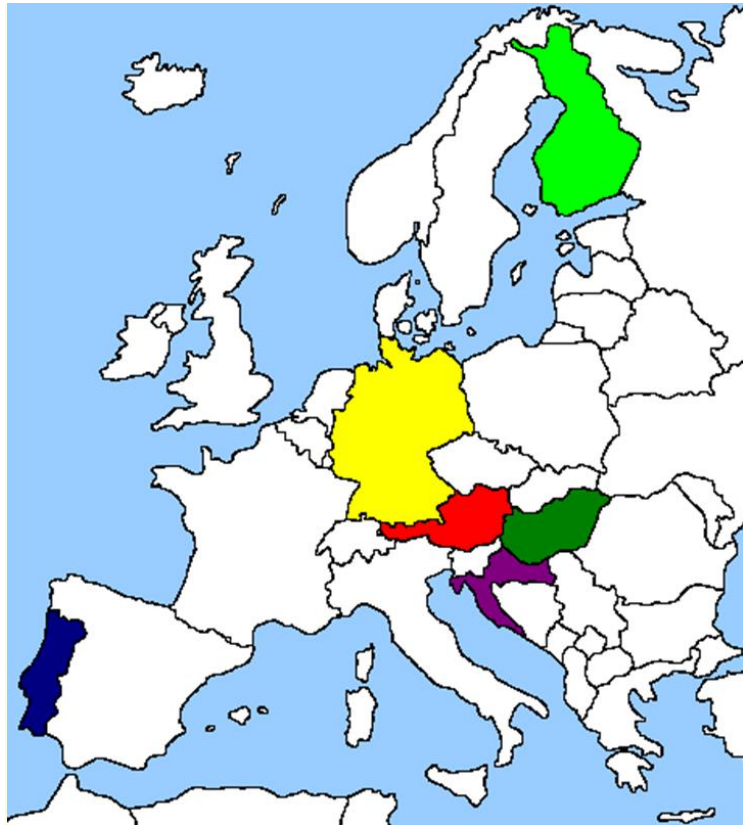
What is EUMeTrain?

- EUMETSAT sponsored international project
- dedicated to the development of online training resources and training courses in the field of satellite meteorology
- started in 2004
- third phase from October 2014

What does EUMeTrain do?

- provide online training material and training courses complementing EUMETSAT's satellite programs
- training and educational activities covers the field of synoptic satellite meteorology, environmental meteorology, atmospheric chemistry and marine meteorology
- puts special emphasis on the needs of forecasters, students and professionals in meteorology
- provide a 24/7 access to all delivered learning material such as product tutorials, case studies, training modules and recorded lectures

Project Team



Host: ZAMG, Austria

Members: DHMZ, Croatia
FMI, Finland
DWD, Germany
OMSZ, Hungary
IPMA, Portugal

Activities:

- development of training resources
- delivery and organisation of training courses
- maintenance of the web page and ePort

NMSs of Spain, Slovenia, Hungary, Serbia and Lithuania acted as **associate members**


How does EUMeTrain conduct training?

- the need for training on a meteorological topic is evaluated on a yearly basis
- current events, new research activities and technical developments are included in the training schedule
- training modules provide an up-to-date learning platform
- compliant with standards defined in WMO publication No. 1083 for education and training in meteorology and hydrology
- latest web technologies are used to facilitate access to the training materials and courses: www.eumetrain.org
- teachers and trainers are available in forums for discussion during courses

2020 perspective - what is planned?

- development of new training material compliant with the EUMETSAT Training Strategy
- a close cooperation and sharing of the resources for training events with EUMETSAT and EUMETCAL
- widening the scope to cover all relevant topics covered by today's satellite meteorology:
 - climate monitoring
 - environmental meteorology
 - marine meteorology
 - synoptic meteorology
 - atmospheric chemistry

- redefinition and sharpening of the program core:
 - better exploitation of the web technologies
 - increase the outreach of the program
 - strengthen the leadership in satellite meteorological education and training
 - ensure program stability to provide training for the years to come
 - prepare for future challenges and new satellite technologies
 - use synergies with other meteorological training programmes
- **The strength of the EUMeTrain project lies in its ability to quickly react on emerging training needs !**

- 
- Case studies
 - analysis of interesting or extreme cases
 - Training Modules
 - self-study modules on different topics
 - Product Tutorials
 - satellite products “user guides”
 - Webcasts
 - recordings of presentations
 - Event Weeks
 - on up-to-date meteorological topics
 - SATMANU
 - maintenance and upgrade of the new version
 - Colour Interpretation Guide
 - different RGB colours interpretation
 - Weather Briefings
 - 1 per month – analysis of current weather

all training and learning resources produced by the EUMeTrain are stored in the Resources repository - Java applet gives quick access to the resources with several search criteria to be applied

CASE STUDIES

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Reset

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Case Study

Catastrophic Forest Fires in
Caramulo Mountains

Description

From 20 August to 2 September
2013 the Caramulo Mountains in
central Portugal experienced a
series of three large and
devastating forest fire events.

[Click to enter](#)
[more...](#)


Case Study

An Atlantic Storm observed by
Jason-2

Description

This case study demonstrates the
usability of wave height altimetry
data from Jason-2. [more...](#)

[Click to enter](#)


Case Study

fog and stratus cloudiness
Description

This case study presents an
analysis of radiation fog event
over the Pannonian Basin that
took place from 18th to 20th
November, 2011. [more...](#)

[Click to enter](#)


Case Study

Pukkelpop Storm

Description



Case Study

Flash Flood in Pula

Description



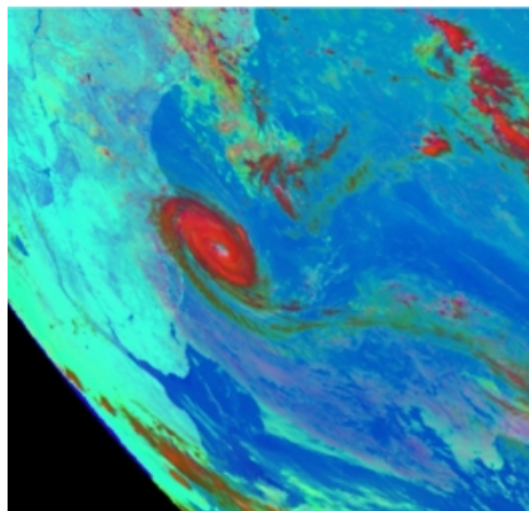
Case Study

Heavy rain and floods

Description

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Training Module



Length

► 240 Minutes

Authors

► Jarno Schipper
► Vesa Nietosvaara

Operational use of RGBs

Published: 01 January 2009

Technological advances and the increasing sophistication of weather forecasting have created a demand for more frequent and more accurate and higher resolution observations from space. To meet this demand on 28th August 2002 the first of four satellites known as Meteosat Second Generation (MSG) was launched.

MSG transmits more than 20 times the information of its predecessor. The improved resolution of frequency of data significantly contributes to the accuracy of both short-term and medium range weather forecasts. Since 2004, the MSG satellites have been providing full Earth disc images every 15 minutes, in 12 spectral bands.

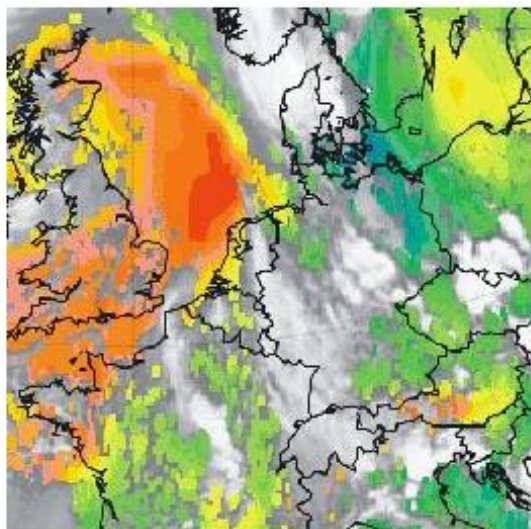
Twenty times more information is also a challenge for the user to cope with. To present all of this extra data in a understandable way to the user, so-called RGB (red, green and blue) images were developed that allow you to easily make a qualitative analysis. In RGB images the different properties of the twelve spectral bands of MSG are combined in one powerful coloured image.

Fog, snow, atmospheric dust, SO₂ clouds from erupting volcanoes, severe updrafts in convective systems, Potential Vorticity (PV) anomalies are just a few keywords and applications that we will teach you to recognise in satellite imagery. On several occasions questions and exercises will help you to test your gained knowledge.

 [Go to Training Module...](#)

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- Tutorials explaining the physical background and use of satellite-based products



Product Tutorial on Total Precipitable Water Content Products

Published: 7 April 2015

In this module, we will introduce the concept of "Total Precipitable Water" (TPW) and show how satellite-based products help in estimating the amount of water vapour in the atmosphere. The module starts with an overview on measuring principles and algorithms on how to retrieve the water vapour content of the atmosphere. In the second chapter, you will learn more about the different TPW products from geostationary and polar orbiting satellites. Finally you will see some practical applications of TPW products in nowcasting precipitation events.

 [Go to the Product Tutorial ...](#)

Filed under Keywords:

water vapour, TPW, satellite, atmospheric rivers

Length

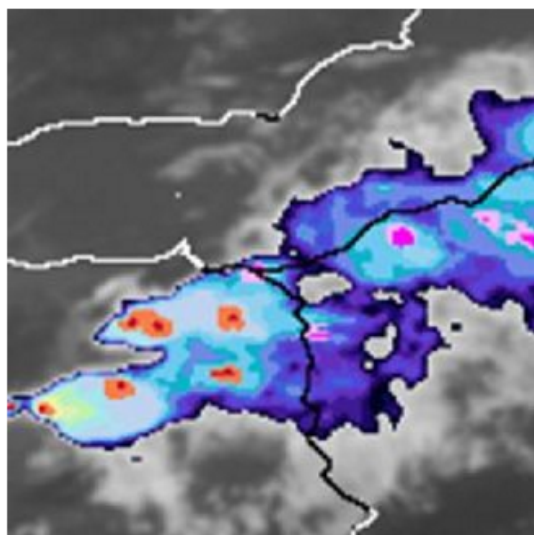
▸ 120 Minutes

Author

▸ Andreas Wirth (ZAMG)

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[Webcast](#)

- Recordings of presentations from Event Weeks and Courses



Length

► 49 Minutes

Author

► Federico Porcu, University of Bologna

HSAF precipitation products

Published: 11 December 2015

The Satellite Application Facility for supporting operational hydrology and water management (H-SAF), established in 2005 as part of the EUMETSAT SAF network, is designed to provide the user community with new satellite-derived products from existing and future satellites with sufficient time and space resolution to satisfy the needs of operational hydrology. Three hydrological variables are considered (soil moisture, snow at the ground and precipitation) and a number of related parameters are made available to the user community, with a quantitative description of their accuracy. Precipitation products are derived from algorithms based on different satellite data (active and passive microwave, visible/infrared) and approaches (artificial neural network, Bayesian statistics, pattern recognition) to provide the most advanced set of precipitation product over Europe, and, in the next future, over Africa. The use of H-SAF precipitation products to study thesevere meteorological events occurred in Italy in the autumn 2014 showed their potential as additional tools in monitoring heavy rainfall, especially in cases when conventional, ground-based instruments are not able to fully describe the precipitation pattern and intensity.

 [Go to Webcast...](#)

 [Lecture slides...](#)

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SatManu

MSG Interpretation Guide

Synoptic Textbook

- New version of the manual

Conceptual Model

Country/Region

Month

Year

Satellite

Instrument

Product

Level

Sort

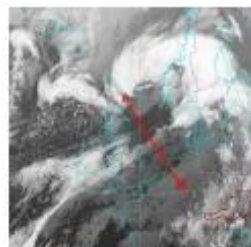
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50 results found

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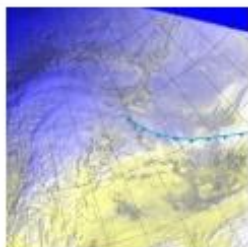

[Click to enter](#)

SatManu

Front decay

Description

Mesoscale areas of cloud dissolution within frontal cloud bands driven by sinking cold air on the anticyclonic side of a jet streak. [more...](#)


[Click to enter](#)

SatManu

Arctic Cold Front

Description

Arctic Fronts are accompanied by mostly low and some mid-level clouds. [more...](#)


[Click to enter](#)

SatManu

Baroclinic Boundary

Description

A Baroclinic Boundary is accompanied by a stationary front-like cloud band situated at synoptic positions which are not typical for classical fronts. [more...](#)



SatManu

Cold Air Development

Description



SatManu

Cumulonimbus Clusters

Description



SatManu

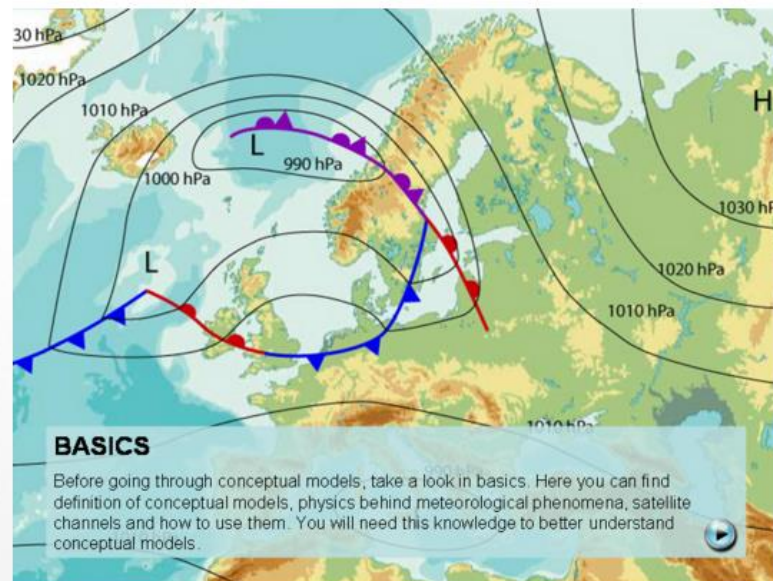
Cumulonimbus (Cb) and Mesoscale Convective System

SatManu

Manual of Synoptic Satellite Meteorology



In 1996, the compilation of a "Manual of Synoptic Satellite Meteorology – Conceptual Models" (or CMs SatManu) was started, initially by the Austrian Meteorological Institute (ZAMG), but later in co-operation with the Dutch- and Finnish Meteorological Institutes (KNMI and FMI, resp.). The material in this manual was produced in electronic form as a CD-ROM within the framework of the sponsored "SATREP" Project of EUMETSAT and is also available online. This type of Computer Aided Learning-material is now widely used as part of EUMETSAT training courses in satellite meteorology, in the training and operational environments of several Member and Co-operating States and by many other meteorological services and research institutes such as Universities world-wide.



NEW DESIGN
based on
COMET
templates

The logo for SatManu, featuring the text "SatManu" in a white serif font, positioned over a satellite image of a coastal region with green land and dark blue water. The text is slightly shadowed to stand out against the background.

CONCEPTUAL MODELS: Full Versions



[Northern Hemisphere](#)

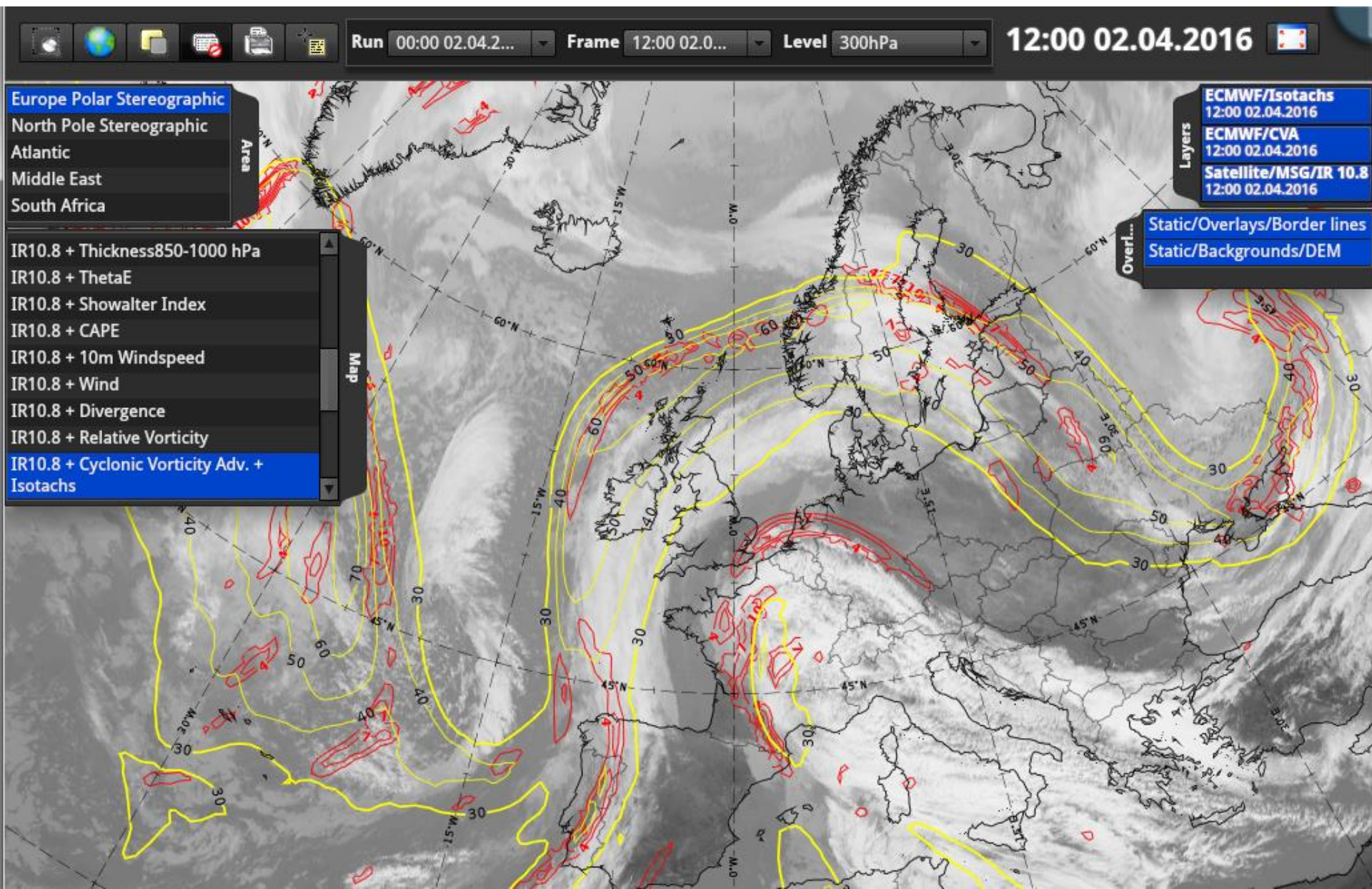


[Southern Hemisphere](#)

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Conceptual models of southern-hemispheric synoptic systems added!

New e-port platform



Weather Briefings

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[Home](#) » Weather Briefings

Welcome to the Archive of monthly **Weather Briefings**

Once a month EUMeTrain organizes a Weather Briefing open to everyone to discuss the images and the corresponding numerical weather prediction data. A basic knowledge of presentations. The Weather Briefings are performed by meteorologists from Croatia, Poland, and other countries. You have the opportunity to discuss with the presenters. The sessions are recorded and made available online.



About the Recordings

Weather briefings are held once a month. They are broadcasted and recorded with a software called [Saba](#). Once recorded, the briefings are made available offline. You can also visit our web page or the Eumetrain channel on YouTube to see the

Calendar

April 2013						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	1	2	3	4

Thursday, 18 April 2013

Weather Briefing at 08UTC

This briefing will be led by Angela Lourenco (IPMA) Kristina Petraityte (LHMS). You are welcome to join this session by signing up for this event using following [form](#).

- Monthly Weather Briefing available for all interested meteorologists, upon registration
- Duration: 30 – 45 min
- analysis of current weather, interesting cases

[Briefing 16 November](#) by Tanja Renko and Ivan Smiljanic (DHMZ)
[warm southern Europe; fog over Adriatic; RGB fog detection]

[Briefing 29 October](#) by Antti Kokko (FMI) and Ivan Tsonevsky (ECMWF)
[tropopause height; monthly extreme forecast index]

[Briefing 17 September](#) by Angela Lourenco (IPMA)

[Home](#) » Courses

Satellite Courses

WMO Standards

The satellite courses organised by EUMeTrain all comply with the competencies and standards identified by WMO.

These standards are complemented by EUMeTrain with features considered to be important and further stress the use of EUMETSAT satellite data for nowcasting and forecasting purposes.

The courses are organised in, what is also known as, a blended learning approach, in which a mixture of online lectures and classroom phase, is offered. Throughout the whole course the progress of the students is evaluated and upon success a certificate is handed out.

For developing the course material, as well as to finance travel costs for the classroom phase, a course fee for participation is mandatory.

The courses are repeated every two years. The lectures are recorded and can be played back to

Satellite Image Interpretation 2014
Basic Satellite Meteorology 2014
Marine Forecasting Course
Basic Satellite Meteorology
Satellite Image Interpretation
Synoptic and Mesoscale Analysis

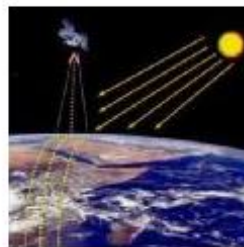


2014

Synoptic and Mesoscale Analysis of Satellite Images -

mental weather picture. The course is designed for operational forecasters and meets the requirements of the WMO.

[More Information](#) [+]



Basic Satellite Meteorology Course - 2014

The Basic Satellite Meteorology Course 2014 focuses on satellite systems, sensors and instruments, on the information content of spectral channels and last but not least on the high variety of meteorological products derived from satellite data. This course is aiming at students and professionals in meteorology who want to keep up to date on the present status and recent developments in the field of satellite meteorology.

[More Information](#) [+]

Core future activities

- On-line and blended courses
- Interactive web-based training material development
- Next generation ePort system maintenance
- Event Weeks on relevant topics
- Monthly Weather Briefings
- Maintenance of training resources, manuals and guides

Upcoming events:

Published: 01 February 2016

EUMeTrain Environment Week



From **11 to 15 April 2016**, EUMeTrain is organising an event week with topics related to environmental meteorology. The focus will be on measurements of atmospheric constituents such as aerosols, dust and trace gases from space. We plan to have 2 online sessions a day (08:00 and 12:00 UTC) starting on Monday 11 April.

Registration is open!

[Find out more \[+ \]](#)

Published: 19 February 2016

EUMeTrain Satellite Skills Course



This **course on satellite skills** will enable meteorologists, but also other geoscientists, to better perform their everyday duties by utilizing the basic principles of remote-sensing of the Earth and the atmosphere. In that perspective this course is considered to be competency-based and primarily tailored for the weather forecasters and meteorologist, so they can fulfil their everyday duties easier and with more accuracy.

The course structure will be mostly asynchronous on a Moodle platform, meaning that the learners will be able to finish it in their own pace. The course will start on May 2 and will finish on 17 June 2016. On the basis of successful completion each learner will be granted with the course certificate.

Registration is open!

[More information about the course \[+ \]](#)

[Go to registration page \[+ \]](#)

Further plans:

- Training on future MTG data use
 - on Himawari data
 - on GOES-R data when available
- Training on new sensors and data applications
- Cooperation with SAFs
- Partnership with EUMETCAL, WMO Vlab, Comet...

Key aspects for future training in synoptic satellite meteorology :

- blended course on synoptic satellite meteorology
- focus on meteorological hazards
- case studies in aviation meteorology
 - Turbulence
 - Low-level jets
 - Icing
- event week on aviation meteorology
- potentials of MTG for shift work
- focus on convection
- cooperation with the project on “Conceptual Models for the Southern Hemisphere”
- inclusion of conceptual models for tropical and subtropical regions

Key aspects of training on climate applications of satellite data:

- CAL module on building climatological time series from satellite data
- CAL module on validation techniques of satellite based time series
- event week on climate change and severe weather
- event week on extreme weather events
- cooperation with the Climate Monitoring SAF is envisaged.

Training activities in Marine meteorology will concentrate on:

- case study on low-level coastal jets
- case study on upwelling processes in the oceans
- course on coastal weather
- environmental ocean event week
- repetition of the marine forecasting course

Key aspects of training in environmental meteorology:

- Environment Event Week
- Case studies, event weeks and modules focussing on meteorological hazards
- Environmental monitoring with meteorological satellites (atmosphere, ocean, ice and land)
- Trace gases retrieval event week (O3M SAF)

Training on technical aspects of satellite meteorology:

- Training on technical specifications of satellites and data (emphasis on MTG)
- Data retrieval and data formats
- Synergies between satellite and other forms of observation (radar, lightning detection network, etc.)

- Since EUMeTrain defines the training activities on a yearly basis, all suggestions for next year are very welcome!