Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

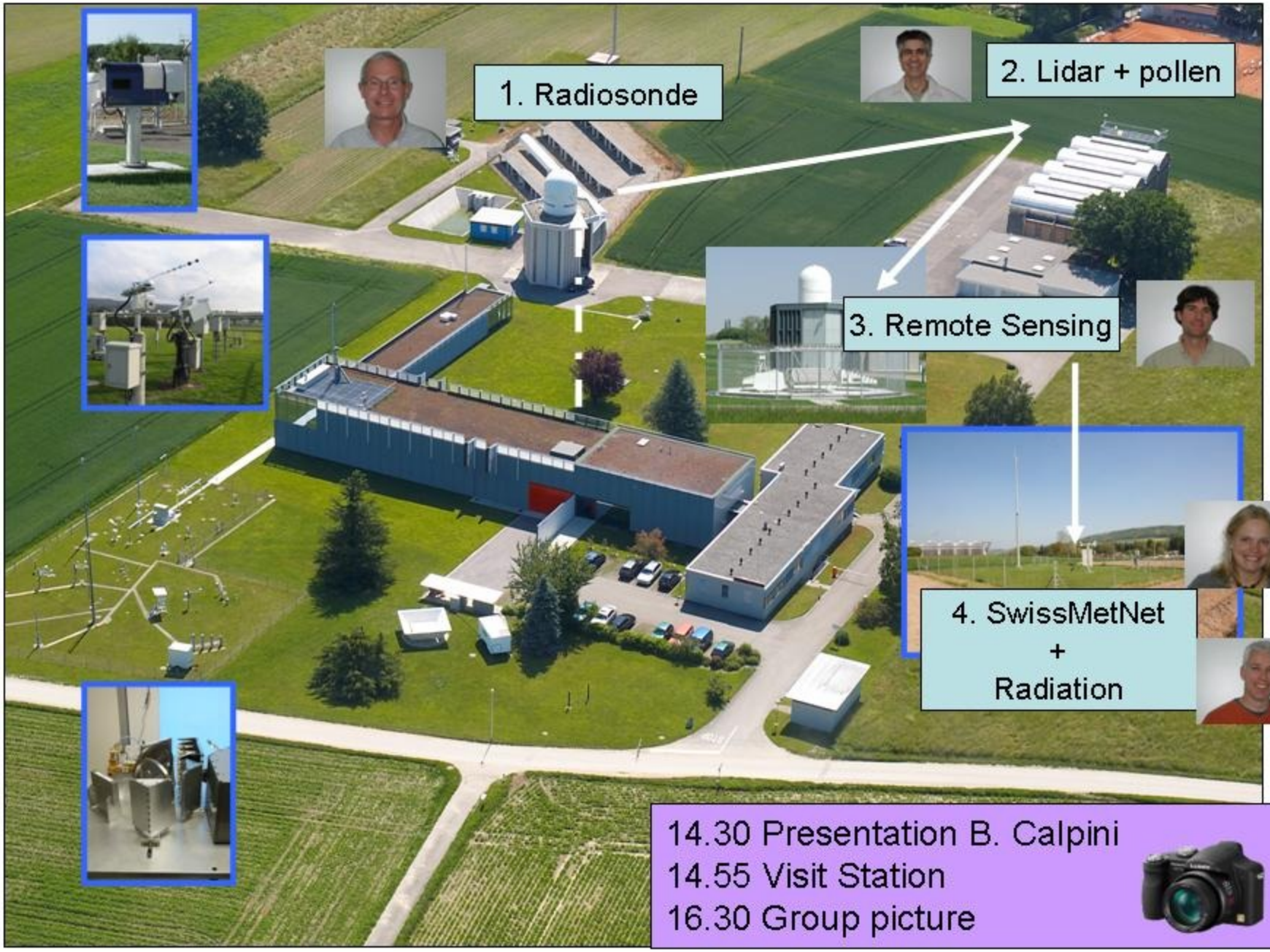
Swiss Confederation

Federal Department of Home Affairs FDHA
Federal Office of Meteorology and Climatology MeteoSwiss

MeteoSwiss
Aerological Station Payerne

future challenges

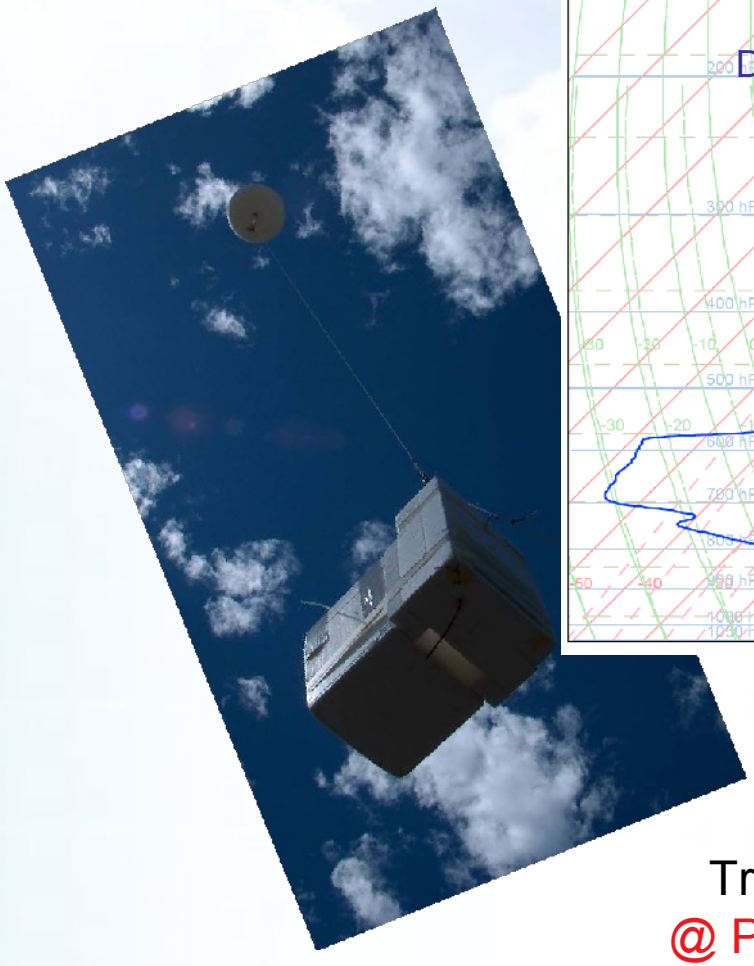
VISIT STATION 03.03.2010 - 14.30-16.30

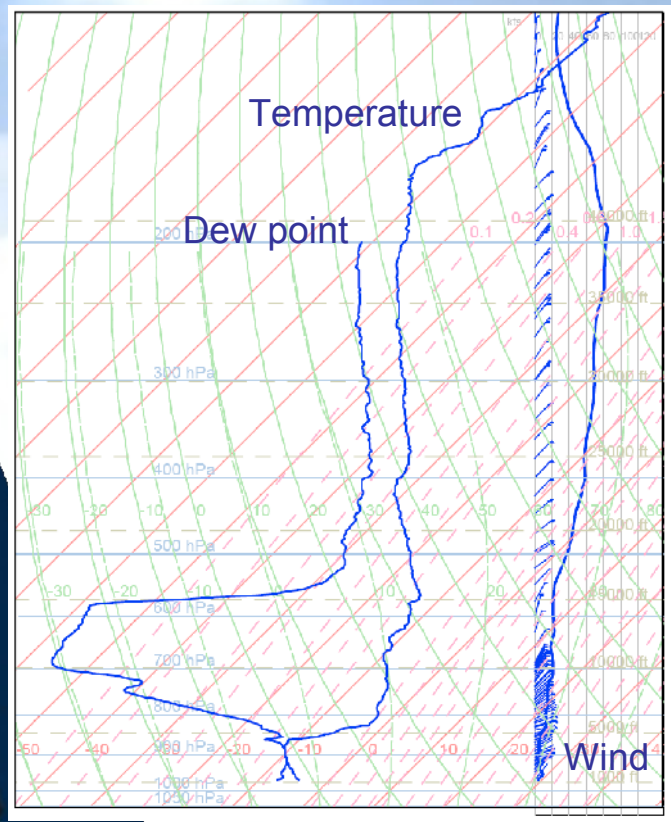


1. RADIOSONDE

Expertise in meteorological measurements

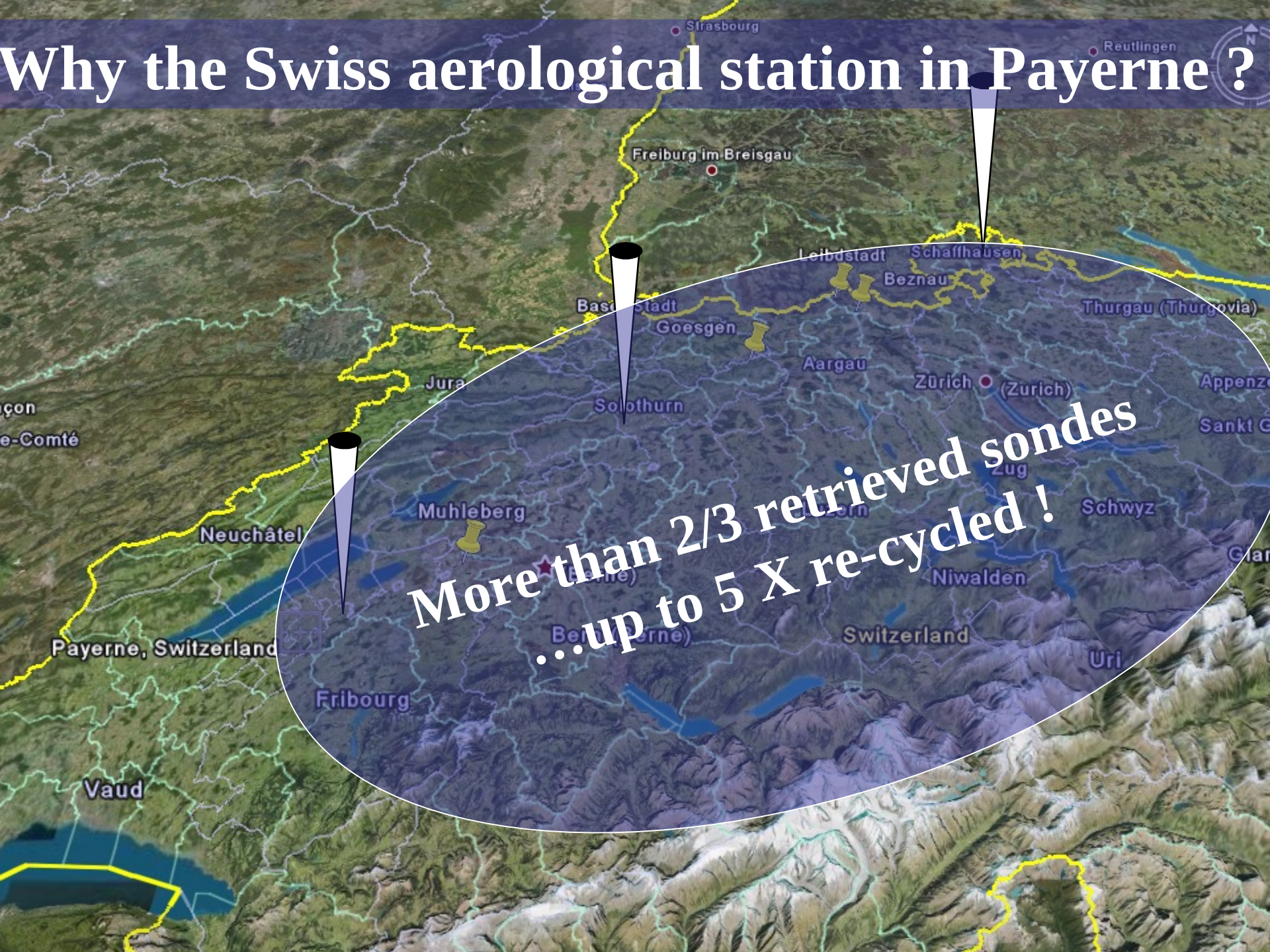
- Atmospheric profiles:
  - Temperature, humidity
  - Wind
  - Ozone
  - Clouds
  - Aerosols
- In situ sounding & remote sensing





Traditional profiling
@ Payerne since 1942

Why the Swiss aerological station in Payerne ?



Organisation Météorologique Mondiale
World Meteorological Organization

Commission des Instruments et Méthodes d'Observation
Commission for Instruments and Methods of Observation

Sous-commission d'aérologie expérimentale
Sub-commission for experimental aerology

JS Ae

COMPARAISON MONDIALE DES RADIOSONDES

WORLD COMPARISON OF RADIOSONDES

Payerne, 8 - 30 mai 1950

ACTE FINAL
VOLUME III

FINAL ACT
VOLUME III

Polycopié à la Station Centrale Suisse de Météorologie, mars 1952

- First world comparison of radiosondes: at Payerne, 1950
- Second one at Payerne in 1956
- Reports are still available

LUAMI output (…in part!)

from Viz Sippican resistive hygrometer

To

Rotronic capacity sensor

MCH_RSO

Submitted to WMO CIMO as an IOM report

Future challenges: GRUAN

Weather and Climate - Deutscher Wetterdienst -- Sta...

Federal Ministry
of Transport, Building
and Urban Affairs

The Reference for Meteorology

Homepage | Weather + Warnings | Climate + Environment | Special Users | Co-operation | About Us | Responsibilities |

News | Contact | Press | WeatherShop | Services A-Z | Library | Weather Glossary | Job Market | Login | Search

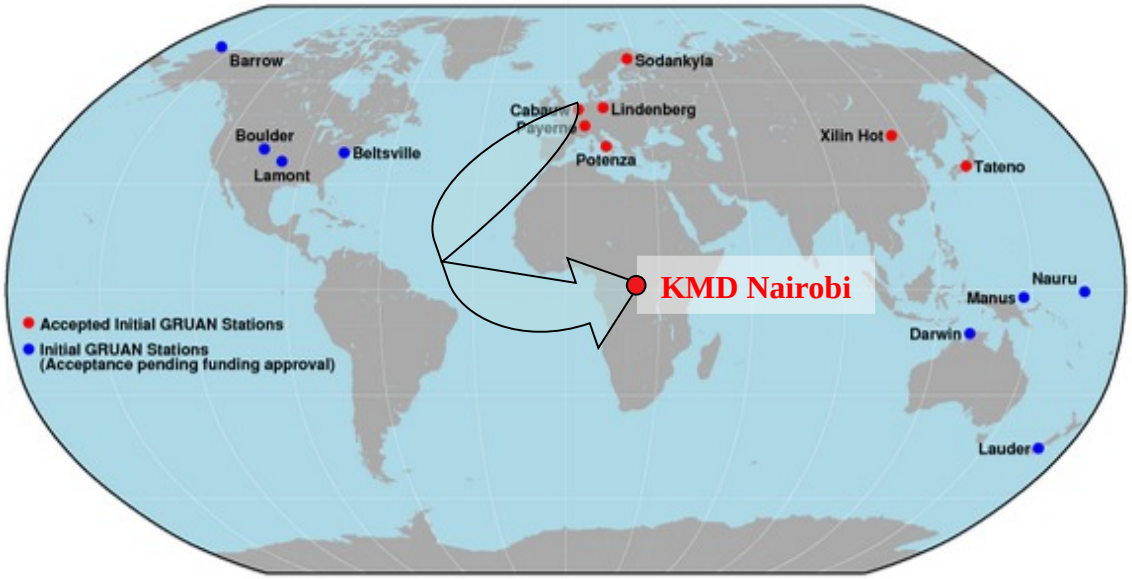
GRUAN - GCOS Reference Upper Air Network

[printer friendly version]

- GRUAN Home
- Overview
- Documentation
- **Network**
  - Lead Centre
  - Science teams
- Data Products
- Meetings
- Campaigns
- Lead Centre
- Blog
- Links
- Contact

GRUAN: Network

GCOS Reference Upper-Air Network



GCOS Reference Upper-Air Network (GRUAN)
Source: DWD

The following initial sites were invited by WMO to become GRUAN stations.

GRUAN - Initial Sites

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

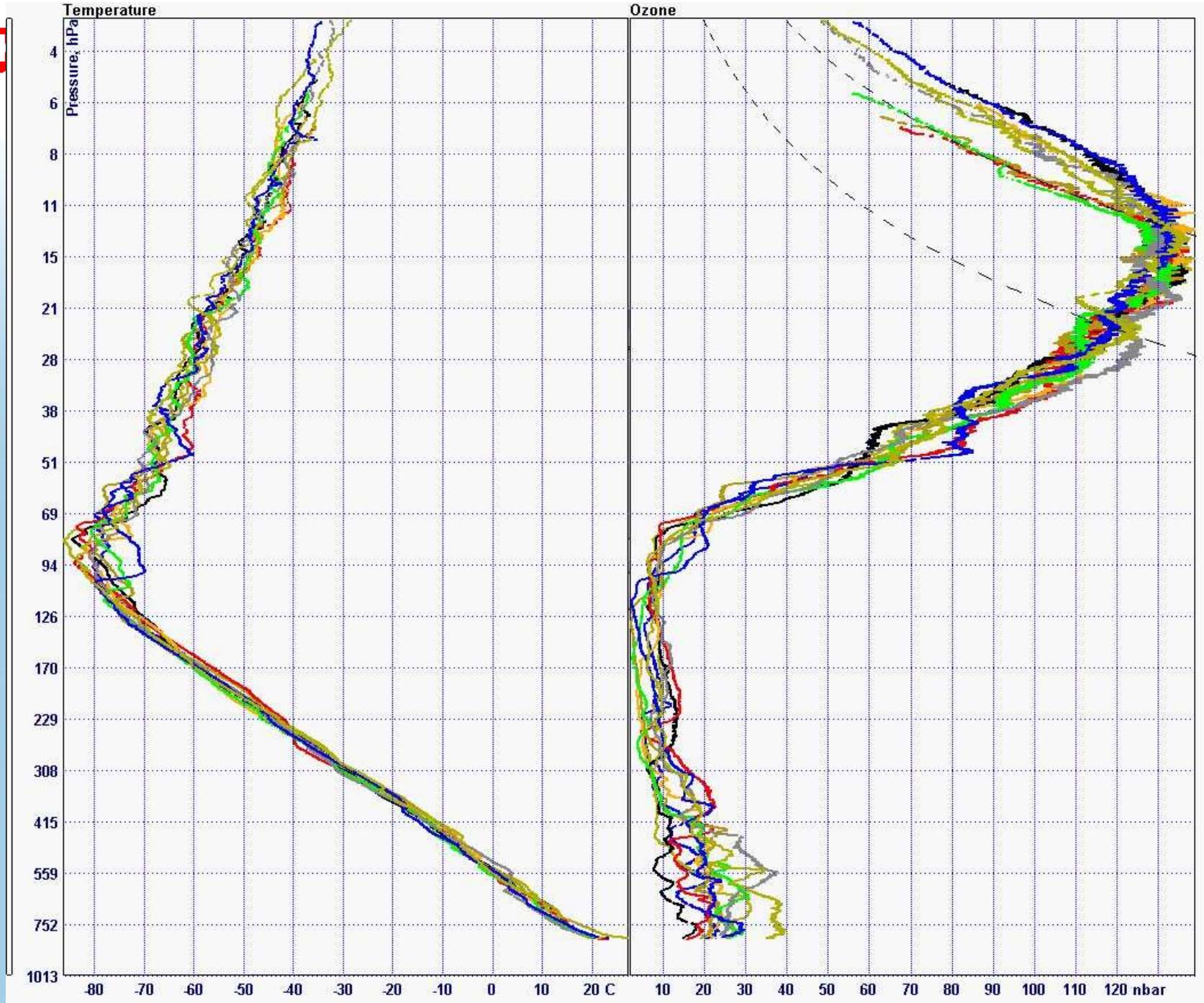
Federal Department of Home Affairs FDHA
Federal Office of Meteorology and Climatology MeteoSwiss

Kenya Met Dpt

More than 10 yr of Ozone radiosonde and Dobson measurements on site

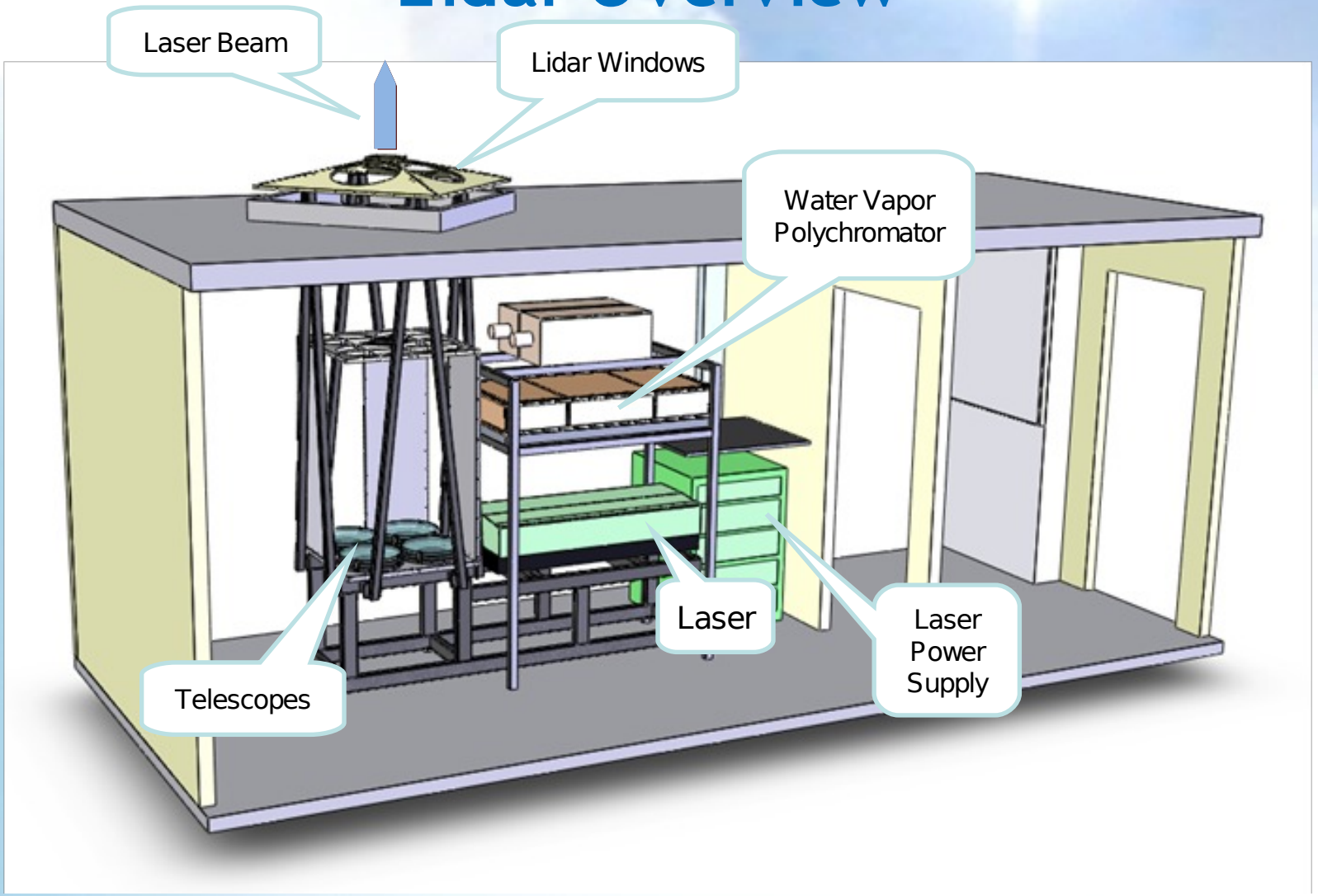

Nairobi (Kenya)
NASA • GSFC
SHADOZ
Southern Hemisphere ADditional OZonesondes
World Meteorological Organization
Global Atmosphere Watch
Organización Meteorológica Mundial
Organisation Météorologique Mondiale
Всемирная Метеорологическая Организация

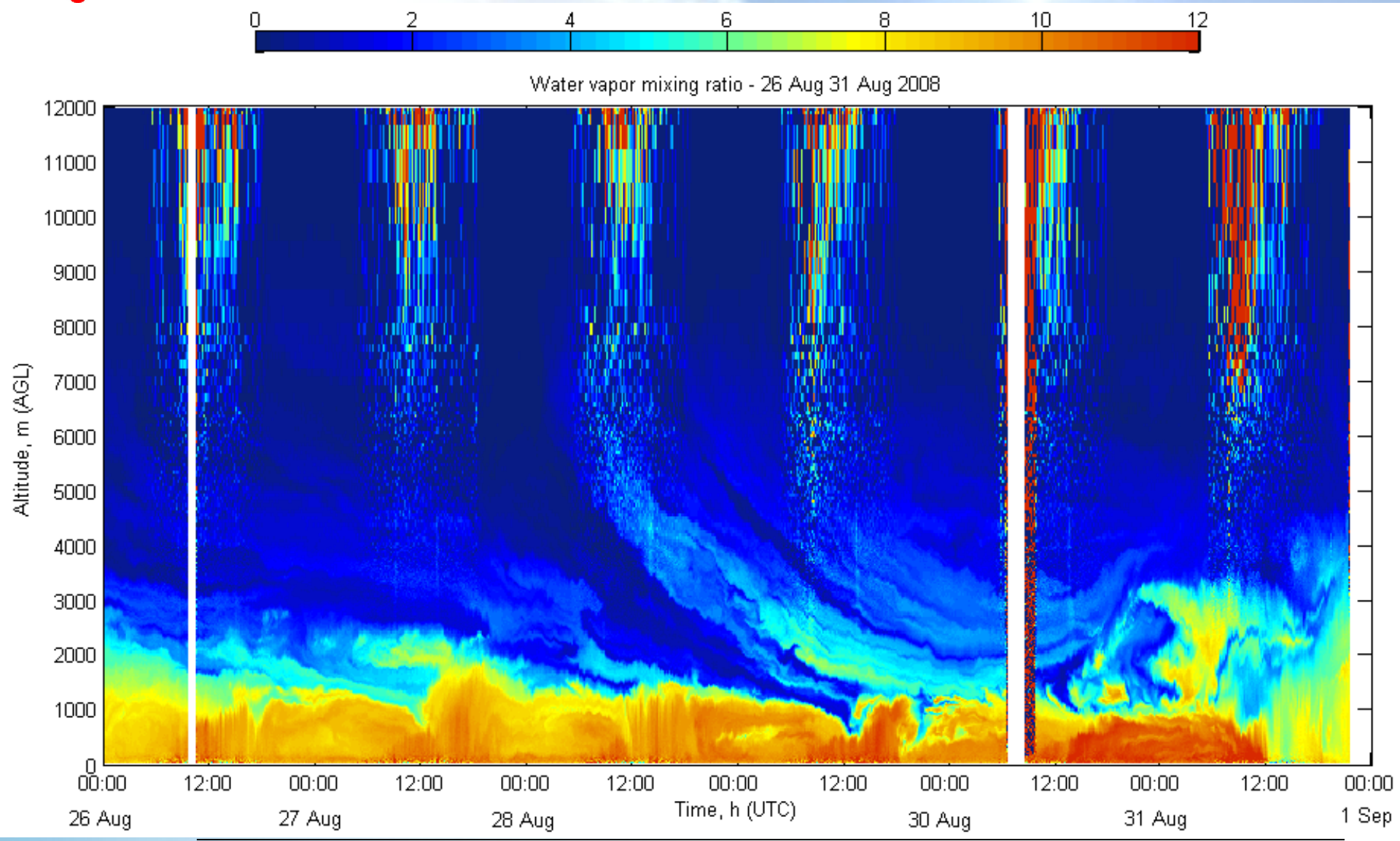

bytech


Temperature
Ozone
Pressure, hPa
4
6
8
11
15
21
28
38
51
69
94
126
170
229
308
415
559
752
1013
-80 -70 -60 -50 -40 -30 -20 -10 0 10 20 C
10 20 30 40 50 60 70 80 90 100 110 120 nbar

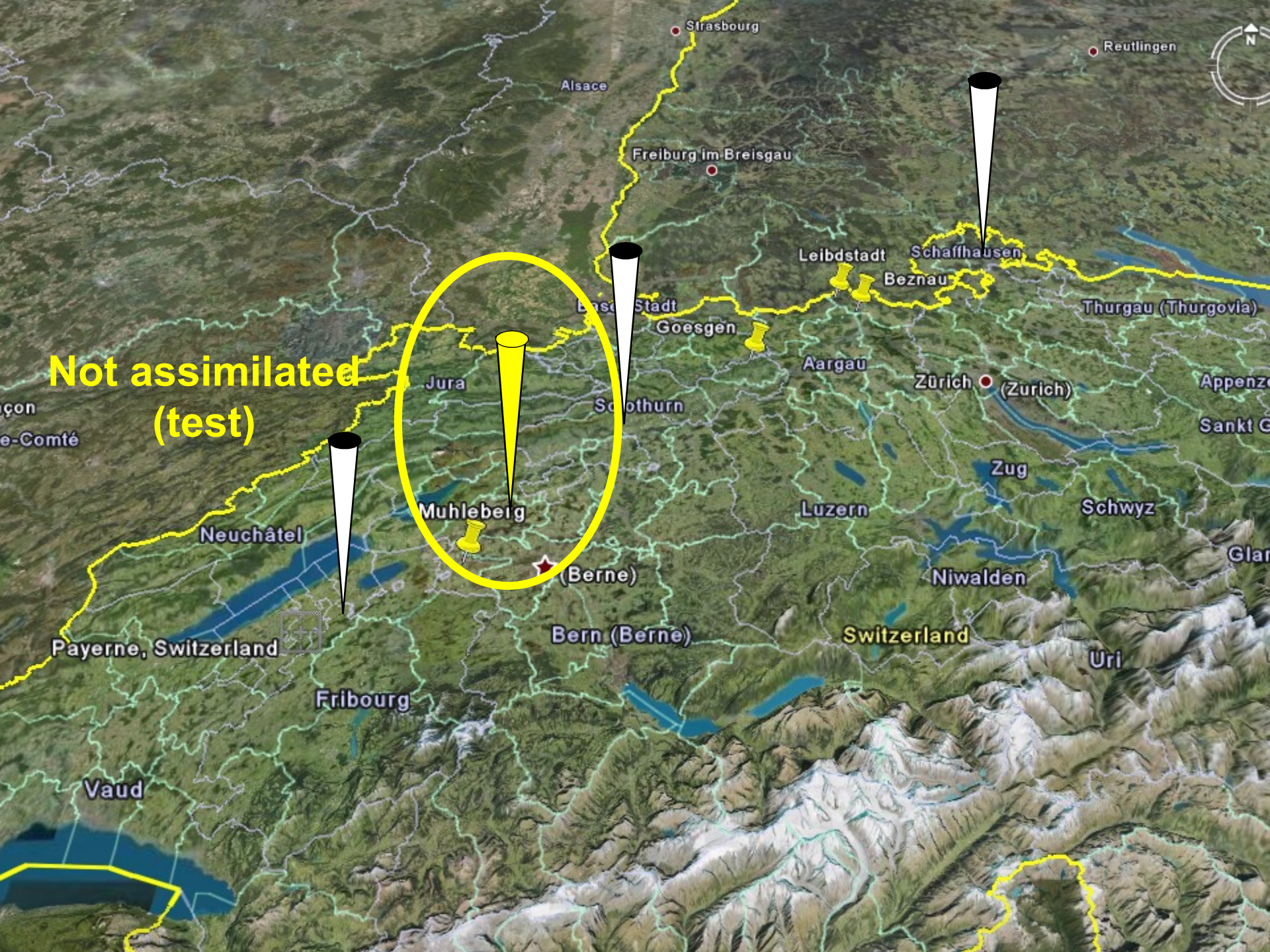
2. LIDAR

Lidar Overview

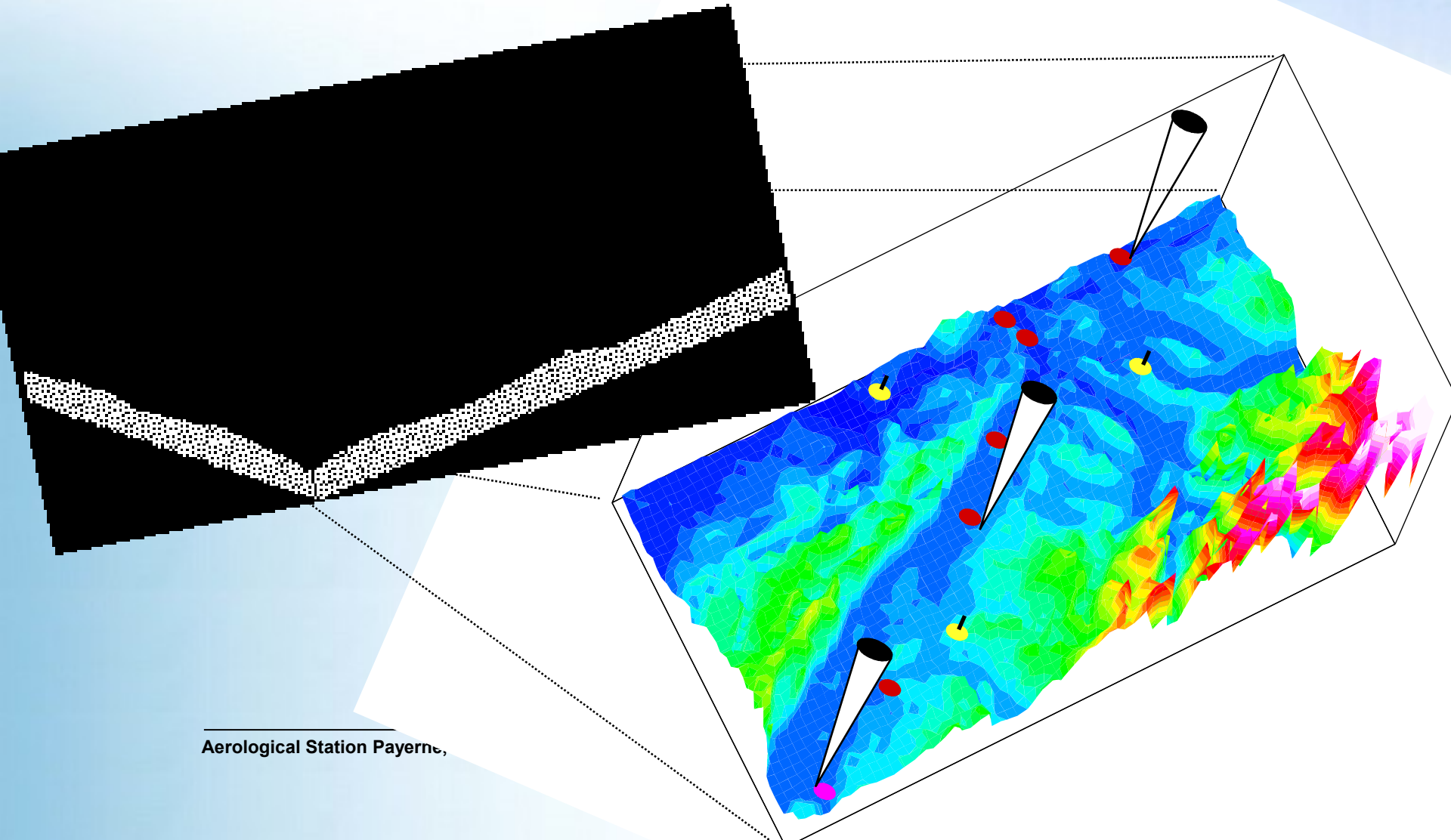



0
2
4
6
8
10
12
Water vapor mixing ratio - 26 Aug 31 Aug 2008
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Altitude, m (AGL)
00:00
12:00
00:00
12:00
00:00
12:00
00:00
12:00
00:00
12:00
00:00
12:00
00:00
26 Aug
27 Aug
28 Aug
Time, h (UTC)
30 Aug
31 Aug
1 Sep

3. WIND PROFILER


Not assimilated
(test)
Strasbourg
Reutlingen
Alsace
Freiburg im Breisgau
Leibdstadt
Schaffhausen
Beznau
Thurgau (Thurgovia)
Goesgen
Aargau
Jura
Zürich
(Zurich)
Zug
Luzern
Schwyz
Muhleberg
Neuchâtel
(Berne)
Niwalden
Payerne, Switzerland
Bern (Berne)
Switzerland
Uri
Fribourg
Vaud

MeteoSwiss Wind Profiler in the field (Muhleberg)



Aerological Station Payerne,

Muhleberg wind: 28-29.03.09

Model

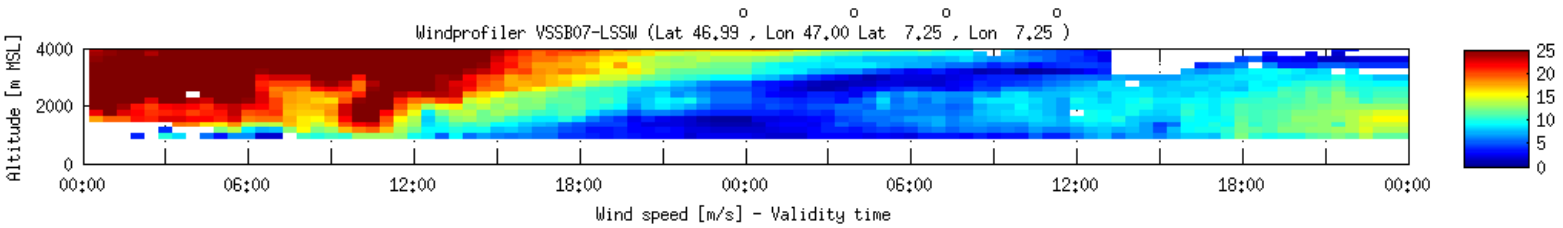
Observation

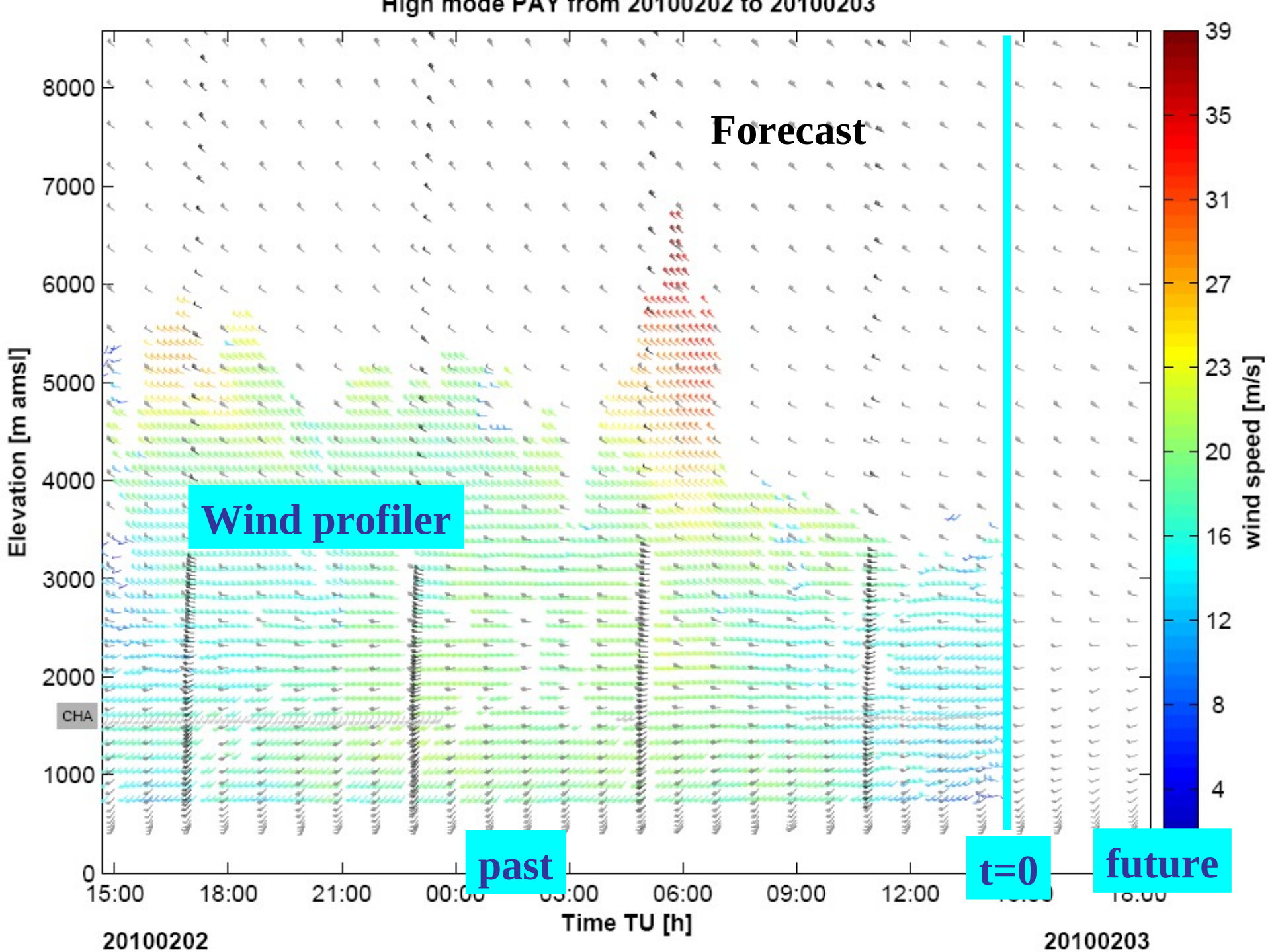
COSMO-2 Forecast at Muehleberg (Lat 46.97 , Lon 7.22) - 09032800 RUN

B: initial forecast

C: forecats resp. +3hr and +6hr

A: analysis




High mode PAY from 20100202 to 20100203
Forecast
Wind profiler
past
t=0
future
Elevation [m amsl]
Time TU [h]
wind speed [m/s]
CHA
0
1000
2000
3000
4000
5000
6000
7000
8000
15:00
18:00
21:00
06:00
09:00
12:00
20100202
20100203
4
8
12
16
20
23
27
31
35
39

Meteorologische Zeitschrift, Vol. 15, No. 1, 3–4 (February 2006)

Editorial

COST 720 Action – TUC

MeteoSwiss

The COST 720 TUC Experiment

DOMINIQUE RUFFIEUX[*1] (Guest Editor) and MARKUS FURGER[2]

[1]MeteoSwiss, Payerne, Switzerland
[2]Paul Scherrer Institut, Laboratory of Atmospheric Chemistry, Villigen, Switzerland

New COST proposal:

Short-Term High Resolution Wind and Solar Energy Production Forecasts

"WIRE"

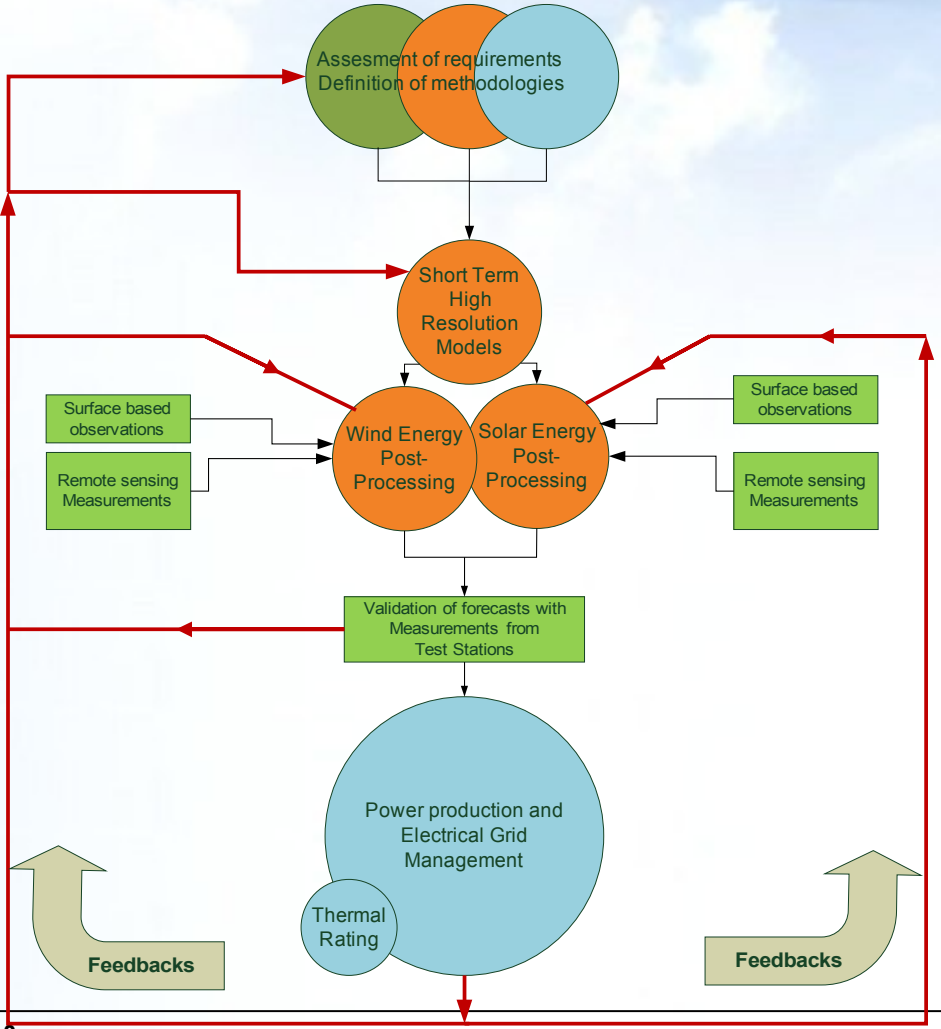
Weather Intelligence for Renewable Energies

Organization

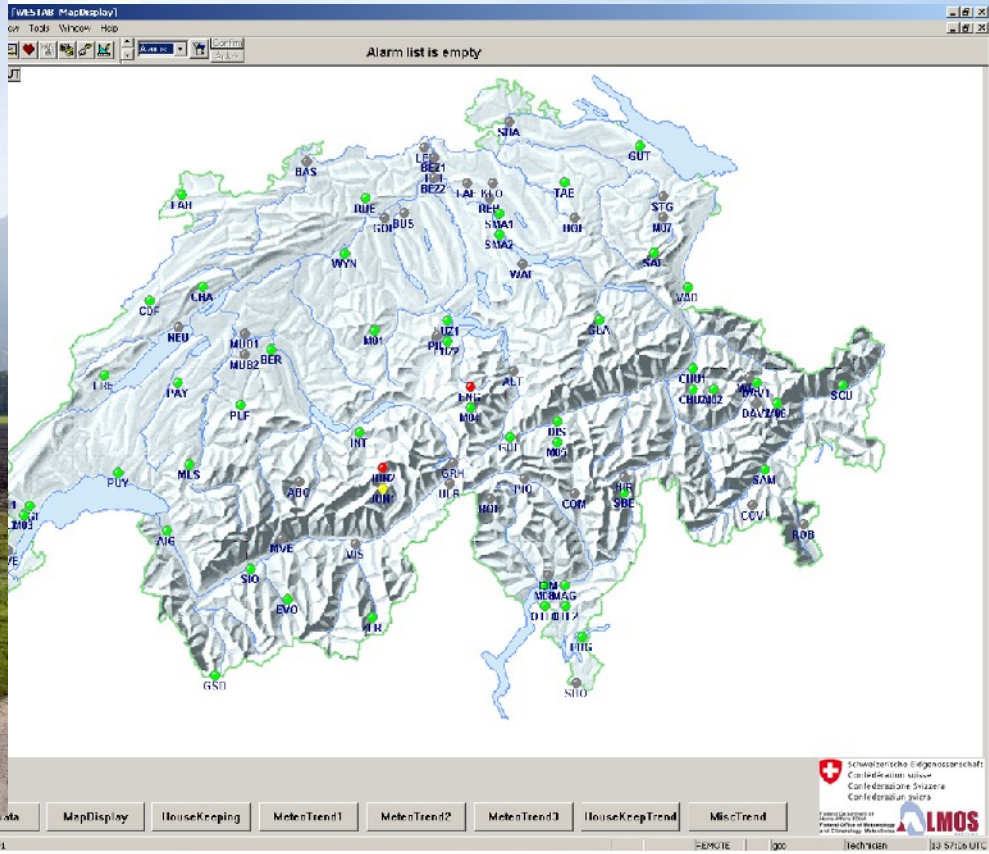
Working Group 1:
- Modeling, post-processing, validation
- Assessment of requirements
- Definition of methodologies

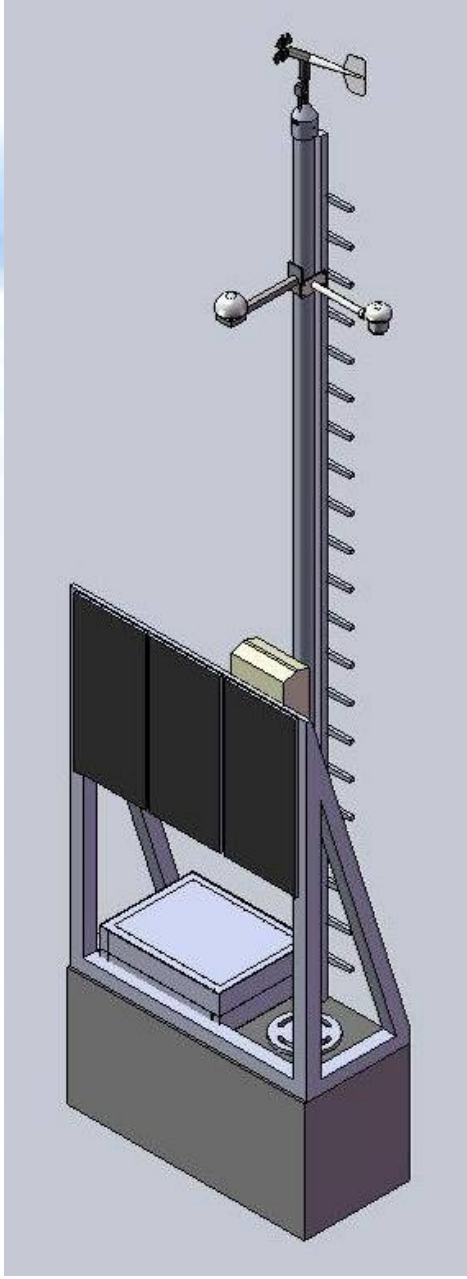
Working Group 2:
- Surface and remote sensing measurements, validation
- Assessment of requirements
- Definition of methodologies

Working Group 3:
- Power production, electrical grid management
- Assessment of requirements
- Definition of methodologies



4. SWISSMETNET + RADIATION


Alarm list is empty
MapDisplay
HouseKeeping
MeteoTrend1
MeteoTrend2
MeteoTrend3
HouseKeepTrend
MiscTrend
ALMOS



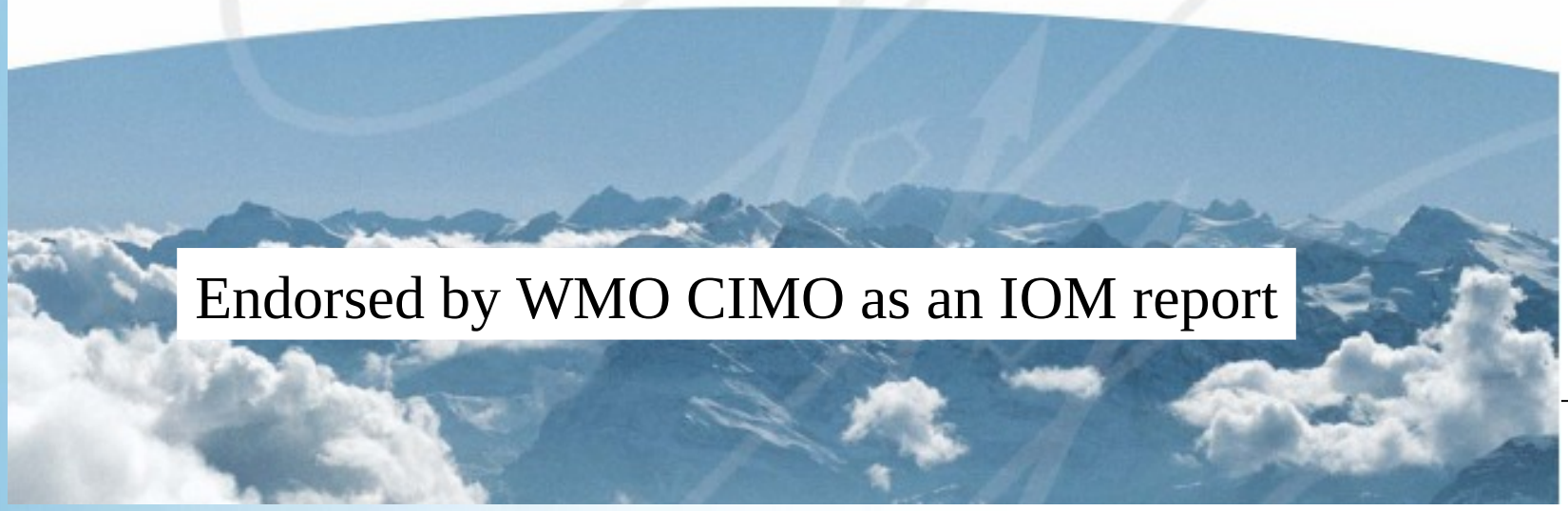
Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Eidgenössisches Departement des Innern EDI
Bundesamt für Meteorologie und Klimatologie MeteoSchweiz

Veröffentlichung MeteoSchweiz Nr. 75

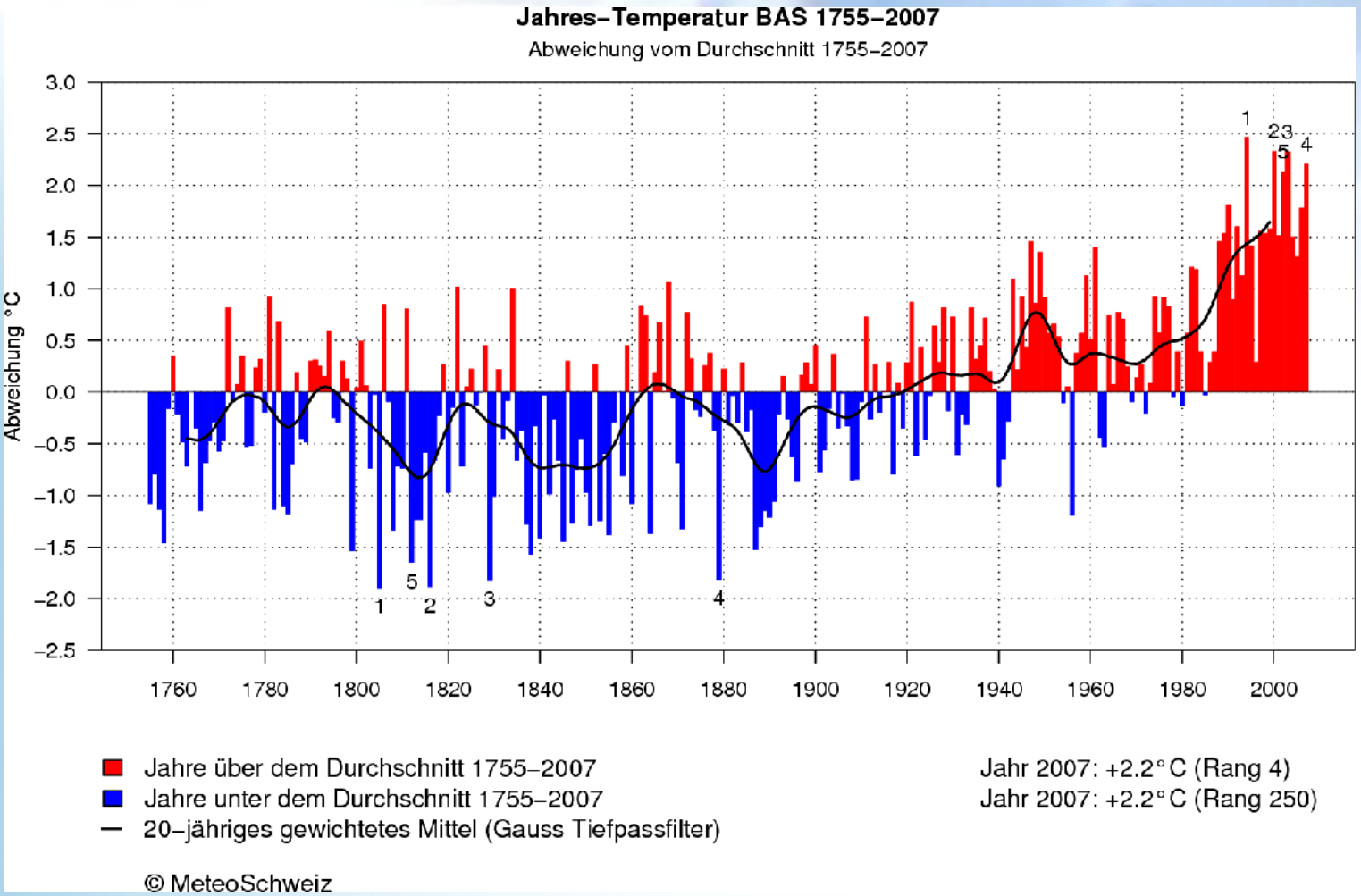
COST 727: Atmospheric Icing on Structures Measurements and data collection on icing: State of the Art

S. Fikke, G. Ronsten, A. Heimo, S. Kunz, M. Ostrozlik, P.-E. Persson, J. Sabata, B. Wareing, B. Wichura, J. Chum, T. Laakso, K. Säntti, L. Makkonen



Endorsed by WMO CIMO as an IOM report

Jahrestemperatur Anomalien in Basel



Begert et al., 2009

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

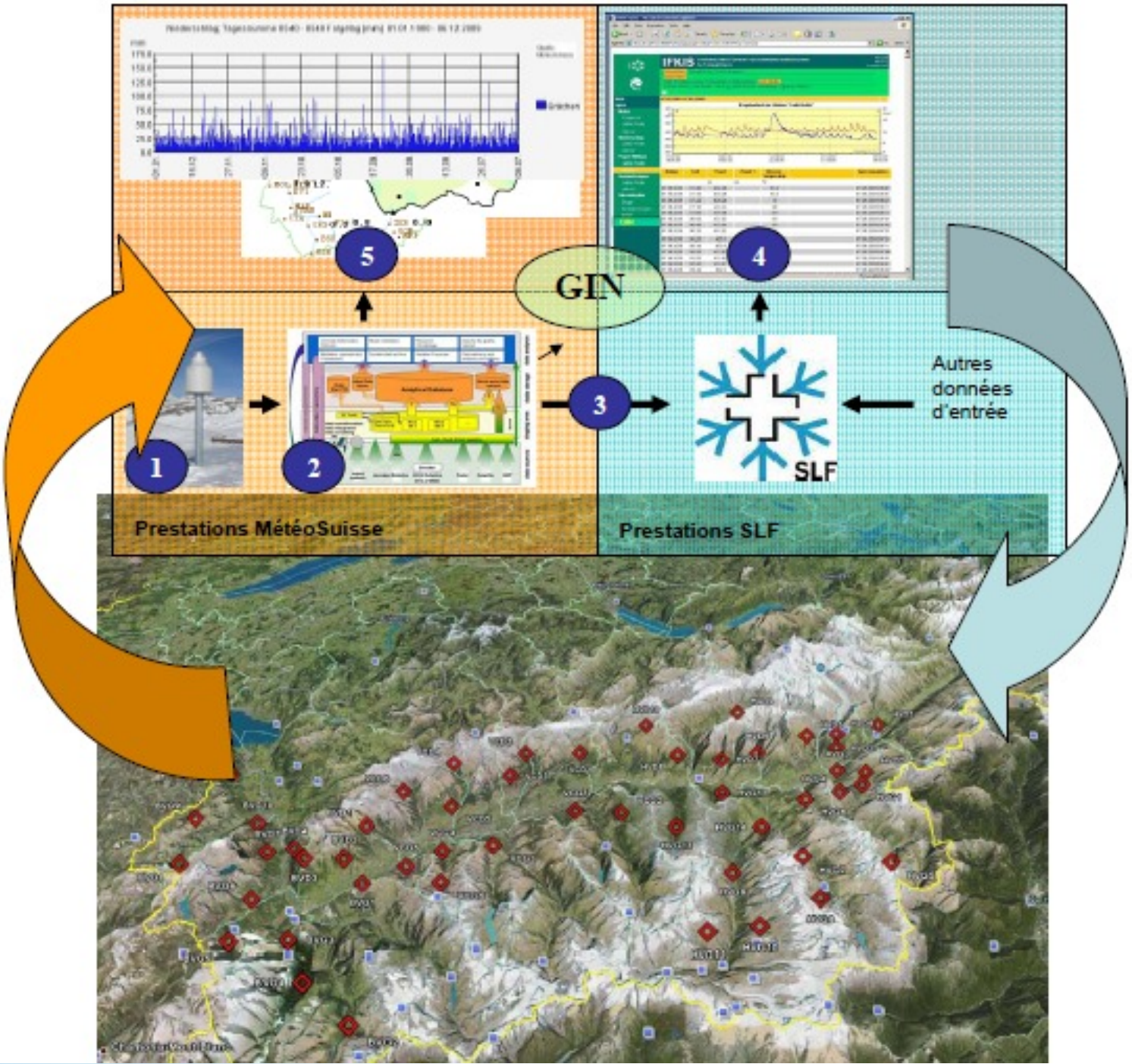
Swiss Confederation

Federal Department of Home Affairs FDHA
Federal Office of Meteorology and Climatology MeteoSwiss

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of Home Affairs FDHA
Federal Office of Meteorology and Climatology MeteoSwiss


TOKO


5
4
GIN
1
2
3
Autres
données
d'entrée
SLF
Prestations MétéoSuisse
Prestations SLF

Payerne as a reference station

- Payerne belongs to
  - GCOS Reference Upper Air network (GRUAN)
  - Baseline Surface Radiation Network (BSRN)
- Standard operating procedures
- Long-term monitoring
- International data centers

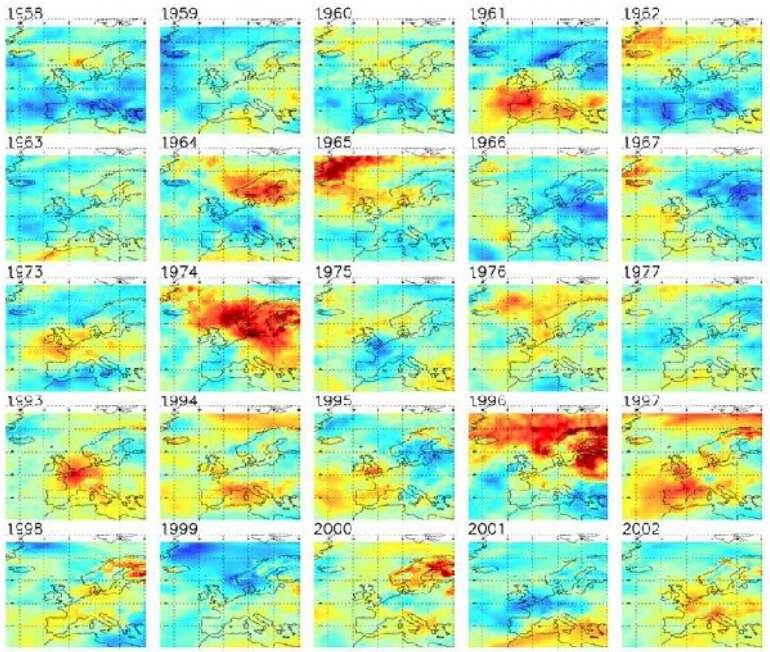
European Cooperation in
Science and Technology

ESSEM

Long term changes and climatology of UV radiation over Europe

Edited by Z. Litynska, P. Koepke, H. De Backer, J. Groebner, A. Schmalwieser and L. Vuilleumier

With contributions from N. Chubarova, U. Feister, J. Kaurola, A. Kazantzidis, J. Krzyścin, A. Lindfors, P. N. den Outer, H. Slaper, H. Staiger, J. Verdebout and D. Walker



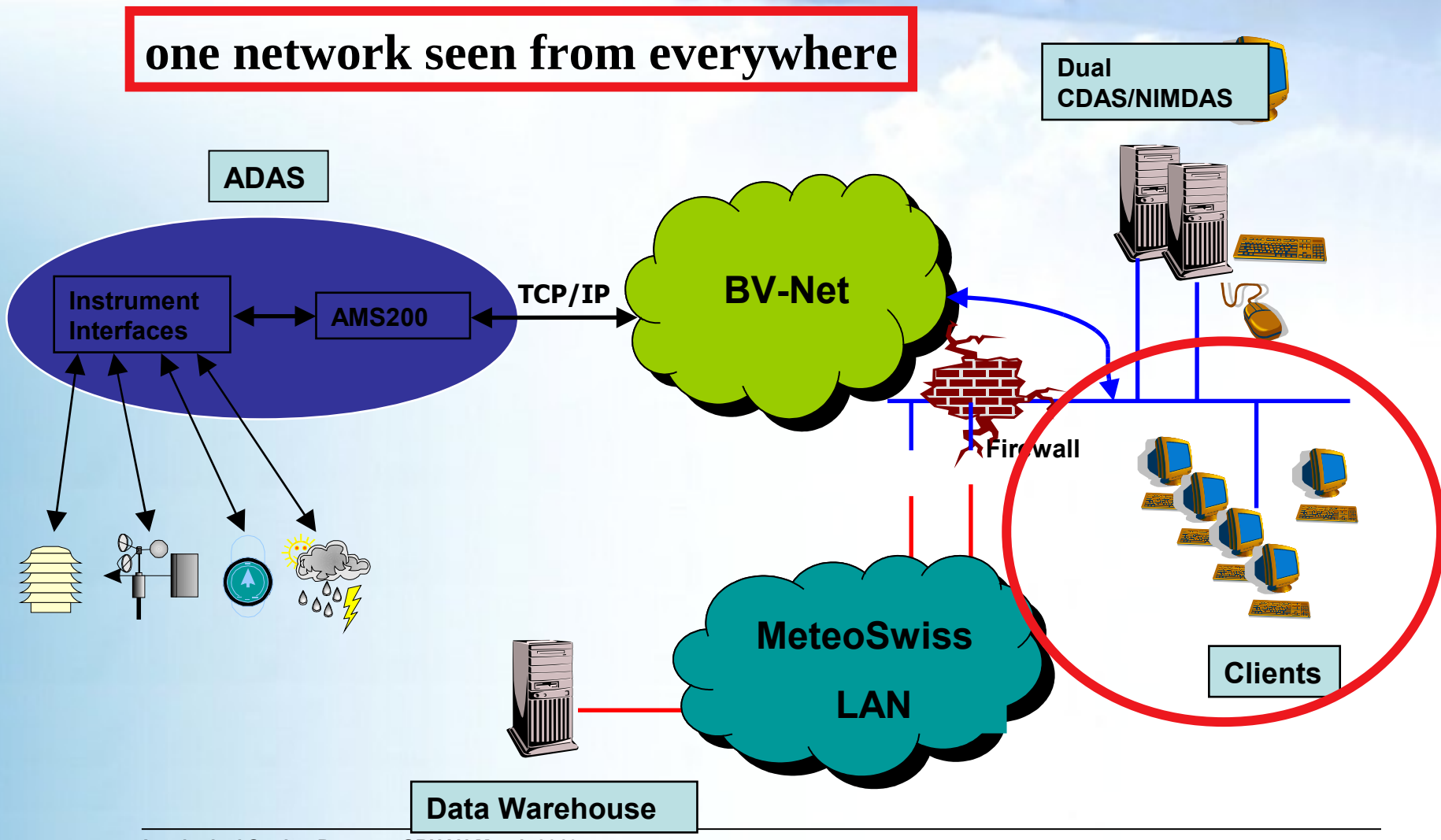
Final scientific report

COST ACTION 726

Aerological Station Payerne, GRUAN March 2010

NATIONAL CONTROLLING CENTER

System Architecture:



World Meteorological Organization

WMO-BIPM workshop on

Measurement Challenges for Global Observation Systems for Climate Change Monitoring

Traceability, Stability and Uncertainty

Steering Committee

Mr Omar Baddour (co-coordinator of the workshop) ..... WMO
Dr William Bell ..... ECMWF
Dr James Butler ..... AREP, GAW and GCOS
Prof. Bertrand Calpini (co-chair of the Steering Committee) ..... WMO CIMO
Mr Bruce Sumner ..... HMEI
Dr Pedro Espina (co-coordinator of the workshop) ..... NIST
Prof. Werner Schmutz ..... WRC
Dr Nigel Fox ..... NPL
Dr Gerald Fraser ..... GSICS
Dr Martin Milton ..... NPL
Dipl.-Chem. Petra Spitzer ..... PTB
Prof. Andrew Wallard (co-chair of the workshop ..... BIPM
Dr. Fuzhong Weng ..... NOAA
Dr James Whetstone ..... NIST
Dr Robert Wielgosz (co-chair of the Steering Committee) ..... BIPM
Dr Wenjian ZHANG (co-chair of the workshop) ..... WMO

BIPM Bureau International de Poids et Measures

30 March – 1 April 2010
WMO Headquarters
Geneva, Switzerland

TECO_2010 Helsinki

http://www.wmo.int/pages/prog/www/CIMO/cimo-teco-meteorex.html

with full credit to the Payerne co-workers:

Eidgen
uisse
Svizze
vizra

tion

irs FDHA
nd Clima


















































VISIT STATION 03.03.2010 - 14.30-16.30