Recent analysis concerning the Iceland-volcano ash cloud in April / May 2010

Aerosol-Climate-Health Expert Group / Southern Bavaria

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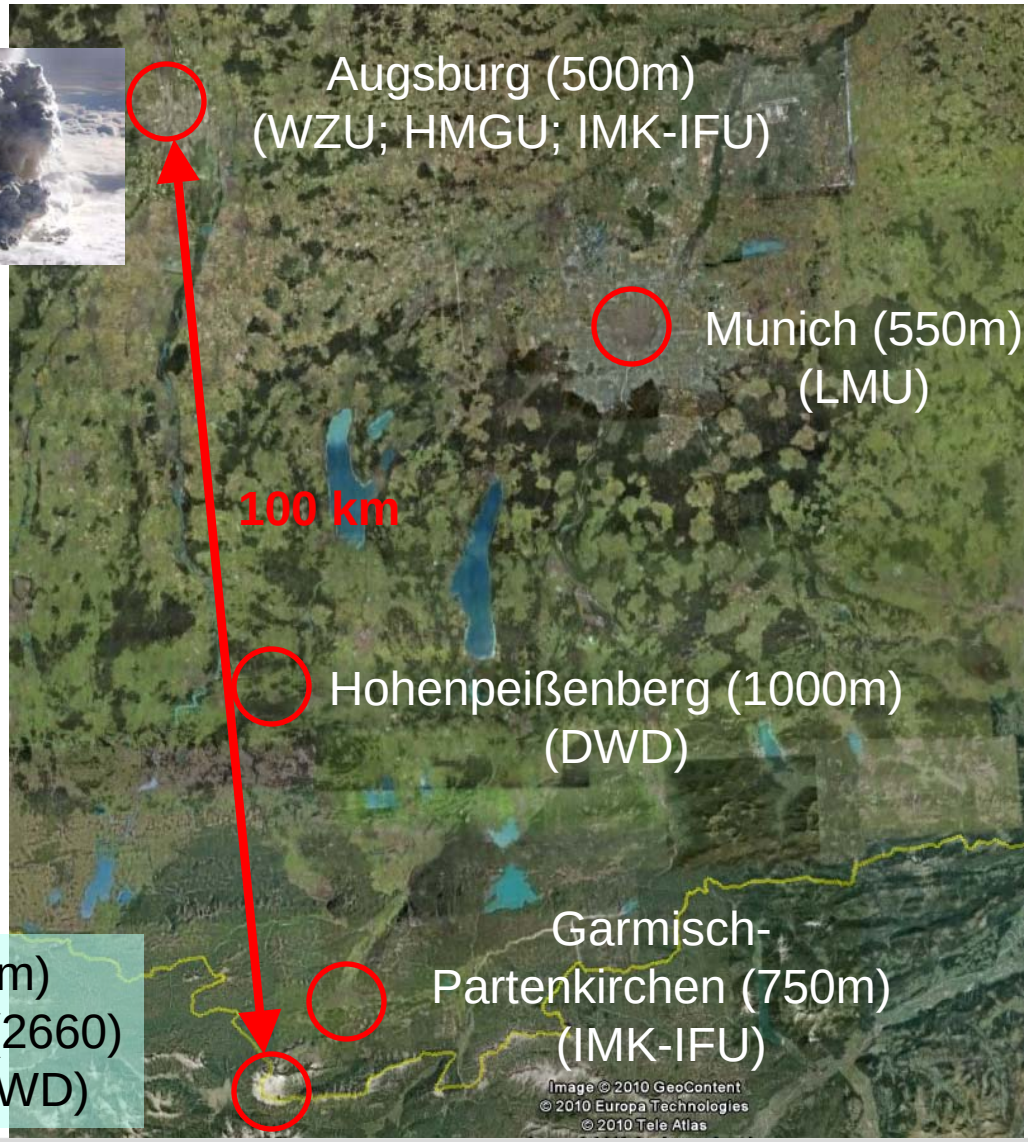
REUTERS / Icelandic Coast Guard



Zugspitze (2964m)
Schneefernerhaus (2660)
(UBA, IMK-IFU, DWD)

Aerosol-Climate-Health Expert Group Southern Bavaria

- **GAW-Global Station of the Federal Environment Agency (UBA)**
  - Dr. Ludwig Ries
- **Institute of Ecological Chemistry (IEC) of the Helmholtz Center Munich (HMGU)**
  - Prof. Dr. Ralf Zimmermann
  - Dr. Jürgen Schnelle-Kreis
- **Institute of Epidemiology (EPI) of the Helmholtz Center Munich (HMGU)**
  - Prof. Dr. Dr. Erich Wichmann
  - Prof. Dr. Annette Peters
- **Meteorological Institute Munich (MIM) of the Ludwig-Maximilians-University (LMU)**
  - Dr. Mathias Wiegner
  - Dr. Volker Freudenthaler
  - Silke Groß
- **Meteorological Observatory Hohenpeißenberg of the German Weather Service (DWD),**
  - Dr. Wolfgang Fricke
  - Dr. Harald Flentje
  - Dr. Werner Thomas
- **Chair for Physical Geography and Quantitative Methods of the University Augsburg**
  - Prof. Dr. Jucundus Jacobeit
  - Dr. Christoph Beck
- **Research Center Environment (WZU) of the University of Augsburg**
  - Dr. Jens Soentgen
  - Dr. Josef Cyrys
  - Dr. Mike Pitz
- **Institute for Meteorology and Climate Research (IMK-IFU) of the Karlsruhe Institute of Technology (KIT)**
  - Prof. Dr. Klaus Schäfer
  - Prof. Dr. Stefan Emeis
  - Dr. Wolfgang Junkermann
  - Dr. Peter Suppan

Complementary:

- **Rhenish Institute for Environmental Research at the University of Cologne (EURAD)**
  - PD Dr. Hendrik Elbern
- **Vaisala, Gmbh, Hamburg**
  - Dr. Christoph Münkel
- **Institute for Meteorology and Climate Research (IMK-TRO) of the Karlsruhe Institute of Technology (KIT)**
  - Dr. Heike Vogel
  - Dr. Bernhard Vogel
  - Dr. J. Förstner
  - Dr. Thomas Hanisch

Research Foci

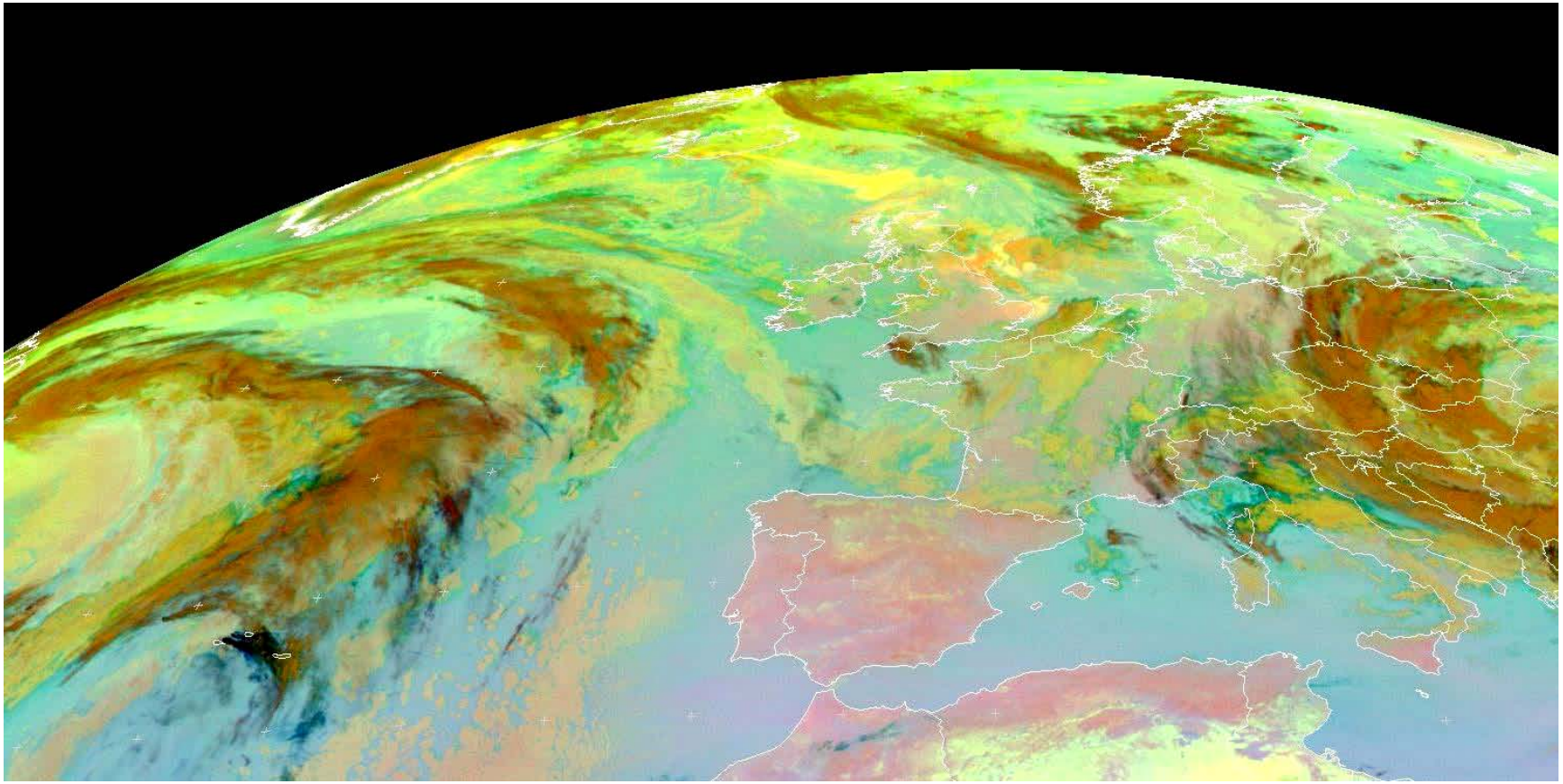
- **Temporal and spatial structure of a volcanic ash cloud – ground-based remote sensing and numerical modelling**
  - Processes of down-ward mixing of the volcanic cloud down to the Earth surface
  - Processes of horizontal distribution of volcanic cloud
  - Physical and chemical characterization of particles sampled during volcanic cloud events
- **Verification of volcanic dust influences upon air pollution at the earth surface on the basis of measurements** (particle concentrations, gas concentrations (SO_2), particle size distribution, particle composition, wet deposition (H_2SO_4), altitude profiles of ozone, altitude profiles of particle backscatter intensities, altitude profile of light polarisation from particle backscatter, AOD etc.)
  - at different Bavarian stations: Schneefernerhaus, Hohenpeißenberg, Augsburg, MIM and LÜB as well as
  - Satellites images, SO_2 column densities and
  - ultra light aircraft flights
- **Possible health impacts**

Tools of Analysis

- MULIS and POLIS, Raman- and depolarization-lidar systems, part of EARLINET in Munich and Maisach; Ceilometer (CHM15kx) in Munich (LMU-MIM)
- Ceilometer (CL31 of Vaisala) in Augsburg; ultralight aircraft measurements (IMK-IFU)
- Ceilometer network (CHM15K of Jenoptik) Germany (DWD)
- In situ measurements of particle concentrations, number densities in different modes and particle composition (HMGU, U Augsburg, UBA, DWD, IMK-IFU)
- In situ measurements and remote sensing of meteorological parameters (DWD, UBA, IMK-IFU, LÜB-stations Bavaria)
- Dispersion modeling - EURAD & COSMO-ART systems (UoC, IMK-TRO)

Satellite Animation

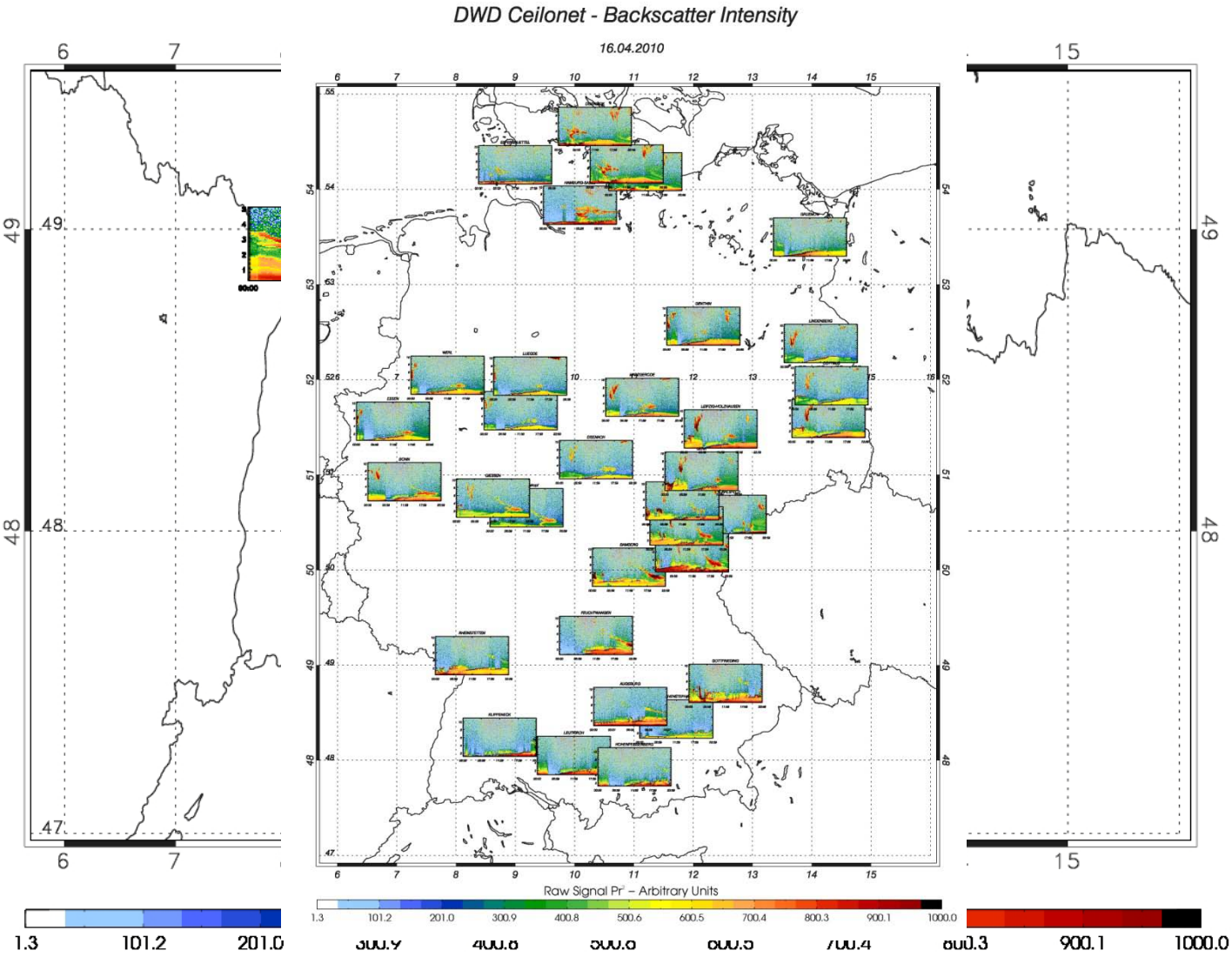
METEOSAT/SEVIRI ash-product, May 17./18. 2010



Source: DWD, W. Thomas

Measurements (I)

DWD Ceilonet – Backscatter Intensity



Source: DWD

Measurements (II)

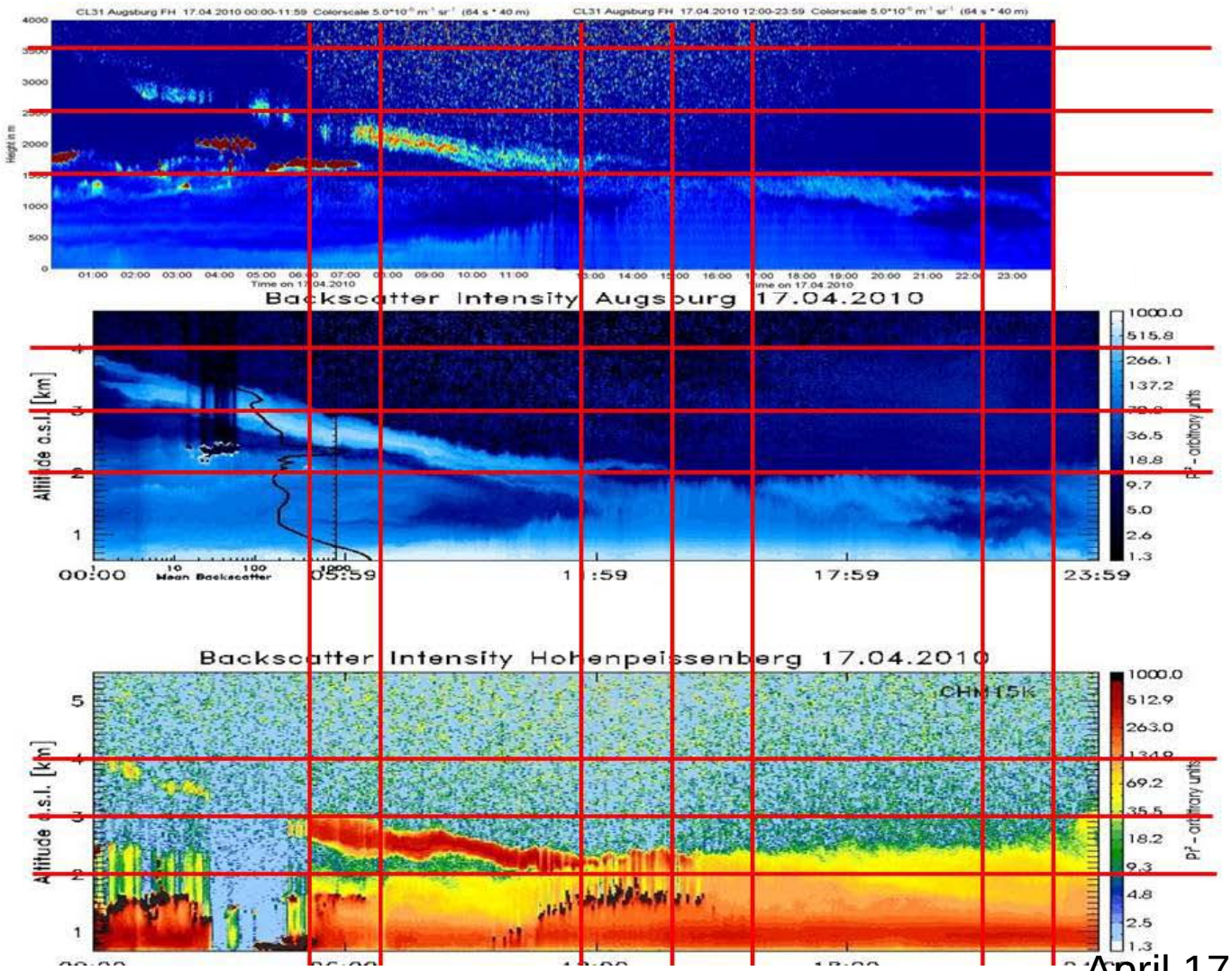
Augsburg city

6 km

Augsburg airport

69 km

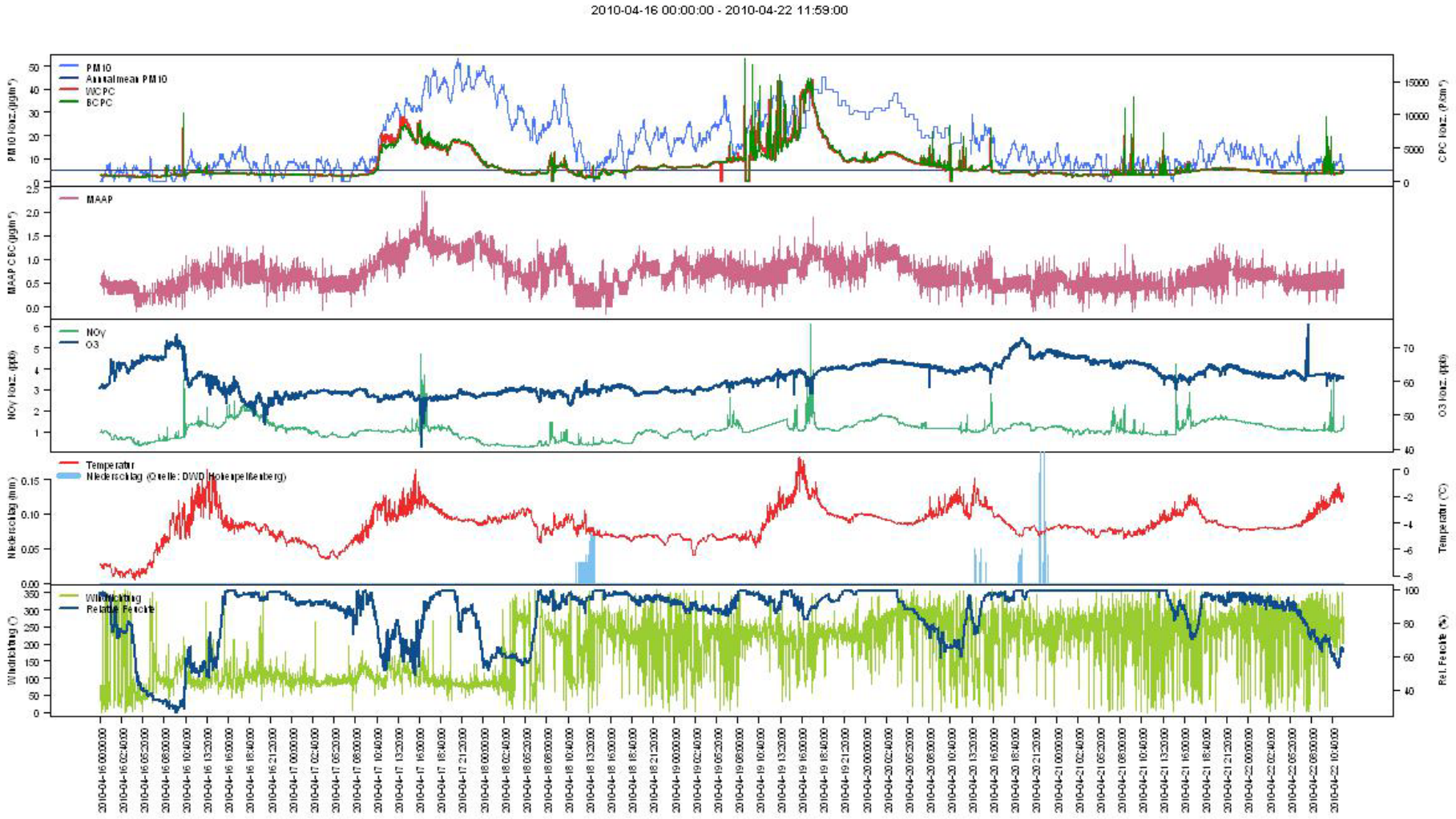
Hohen-peißenberg



April 17., 2010

Source: IMK-IFU, DWD

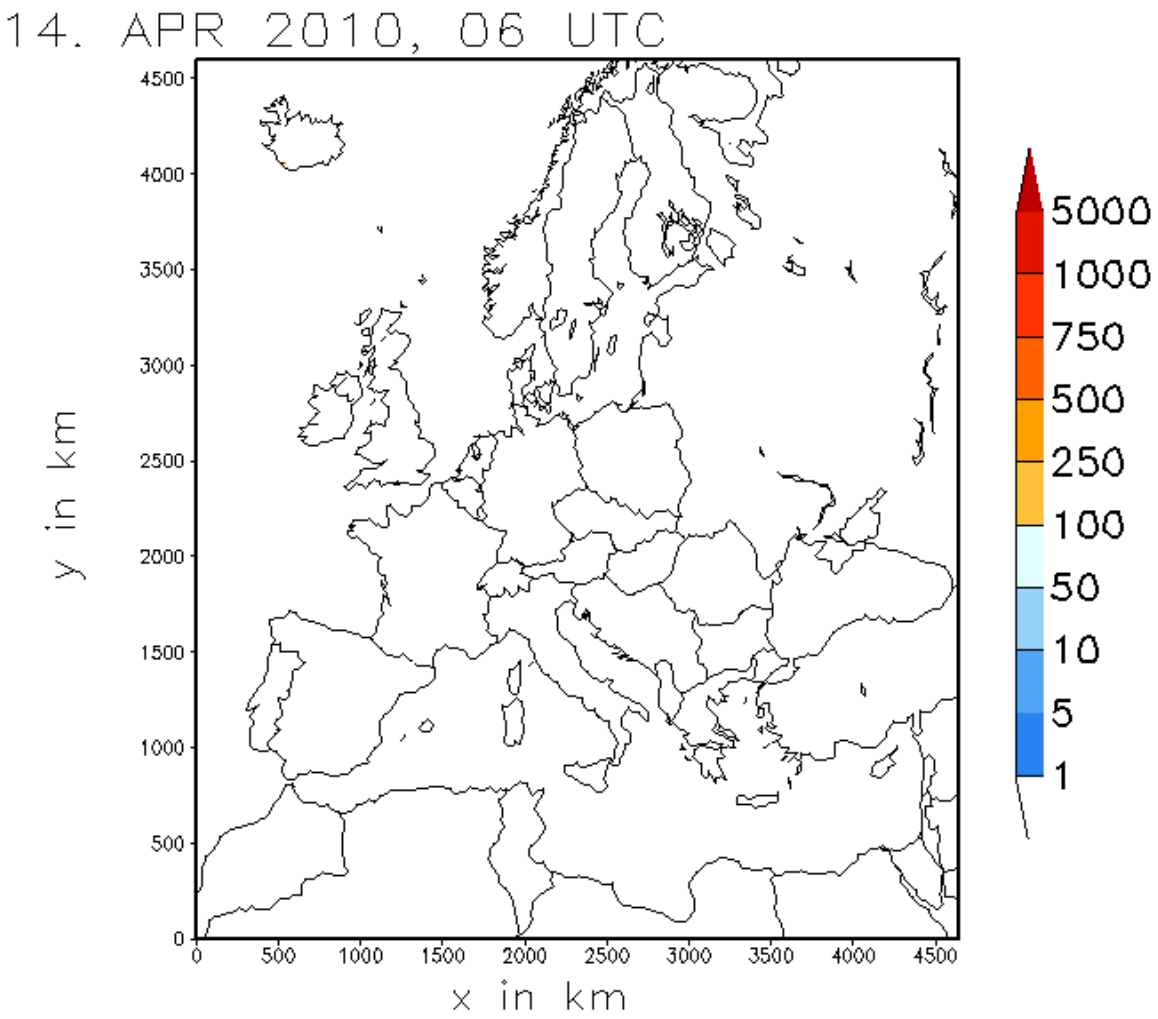
Measurements (III)



Source: UBA; synoptic.+ SO_2 data: DWD

Time Series: April 16.-22., 2010

COSMO-ART Animation



Source: IMK-TRO

Thank you for your attention