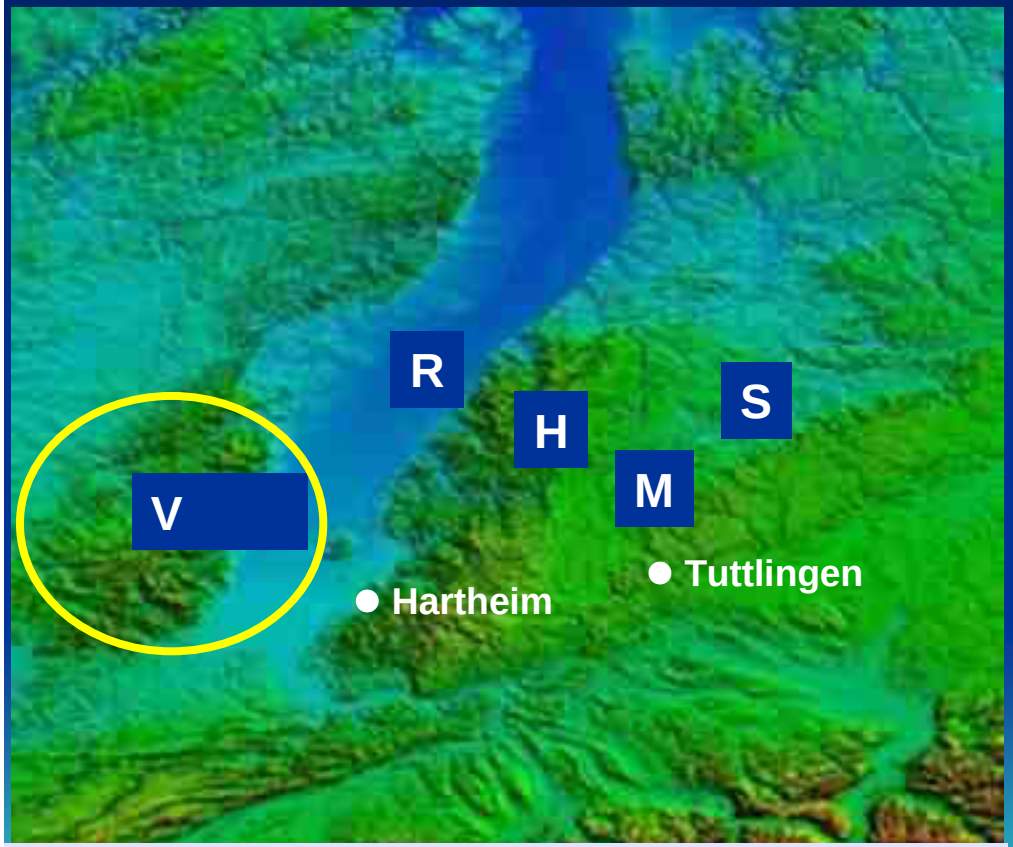
Supersite in the Vosges & Rhine valley



➔ 1 month

➔ together with SAFIRE F20 operations

What is new?

- Recce completed as of 30-31 January 07
- Valley & mountain sites identified
- Dates of operations: 1-31 July
- Additional IPSL partners joining in (strengthening of the “aerosol” component)
- Additional equipment (MWR)

➔ Supersite coordinator(s) designated once staff rotations are established

Vosges (Bischenberg):

➔ LaMP

- X-band radar
- GPS station

Rhine valley (Meistratzheim):

➔ CNRM / 4-M

- RDS station
- UHF + SODAR + Scintillometer
- Surface flux stations (2)
- Soil moisture station (2)

➔ IPSL

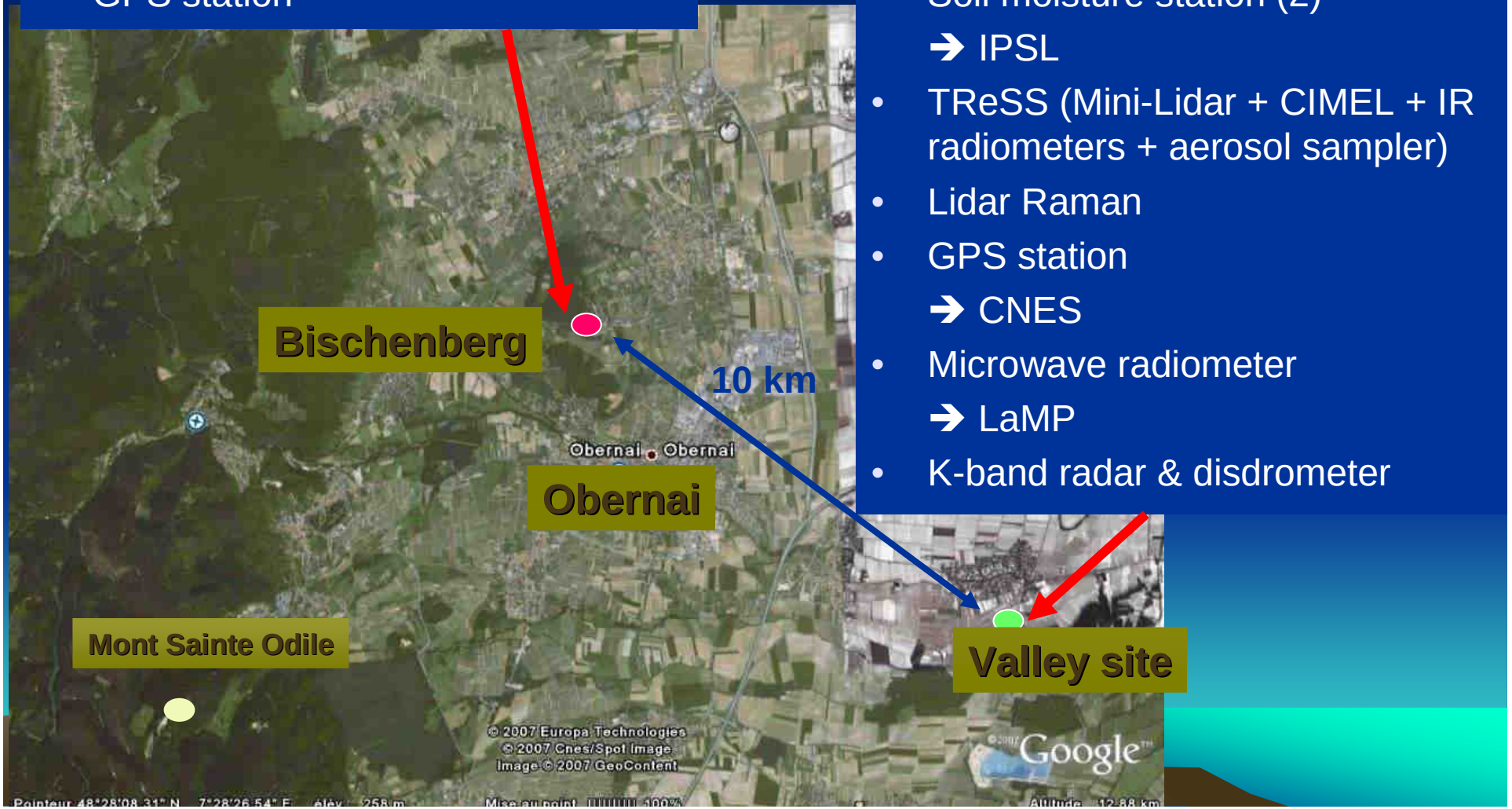
- TReSS (Mini-Lidar + CIMEL + IR radiometers + aerosol sampler)
- Lidar Raman
- GPS station

➔ CNES

- Microwave radiometer

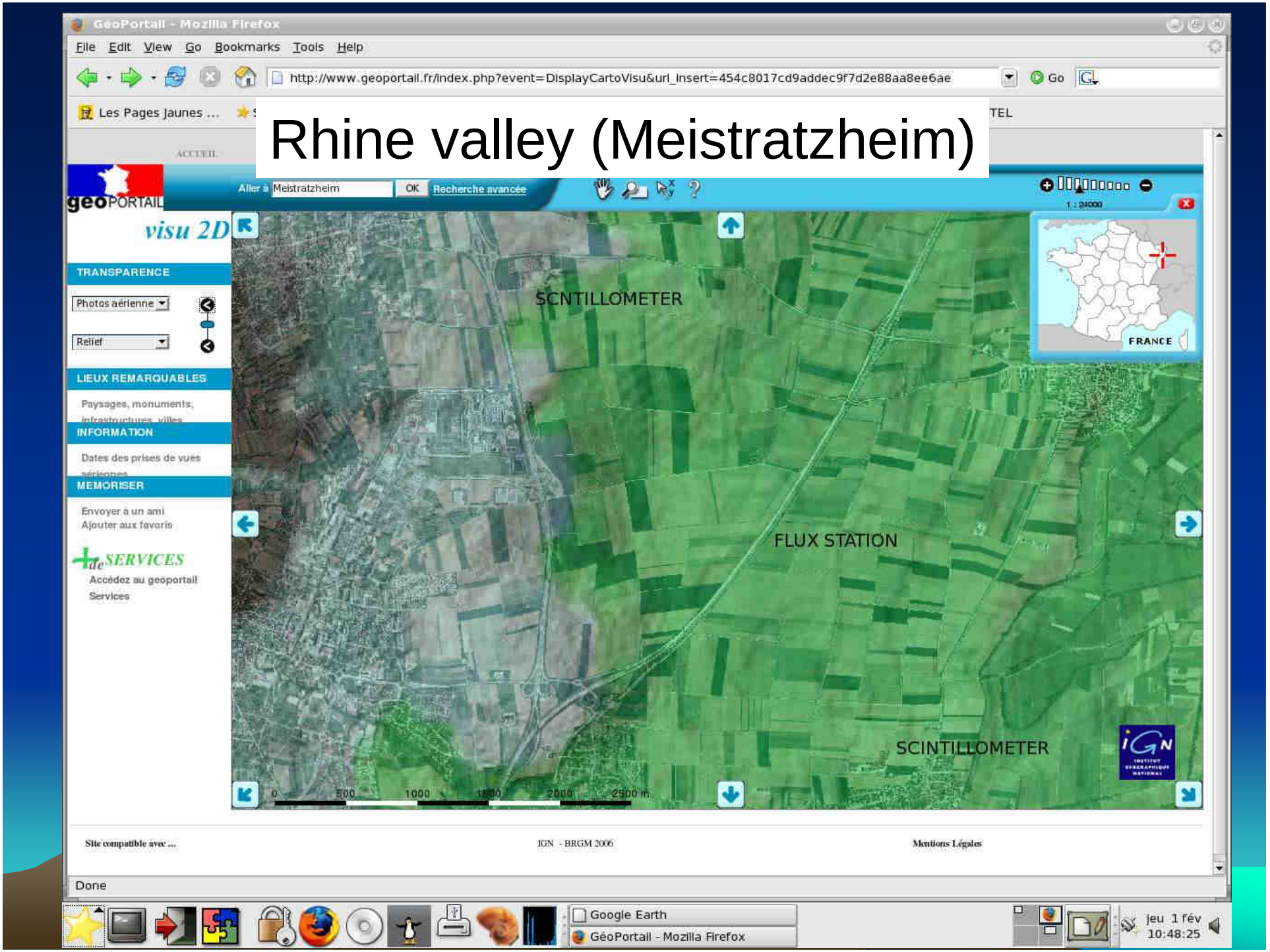
➔ LaMP

- K-band radar & disdrometer



Valley Site (Meistratzheim)

Rhine valley (Meistratzheim)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Rhine valley (Meistratzheim)
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Aller à Meistratzheim
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Recherche avancée
TRANSPARENCE
Photos aérienne
Relief
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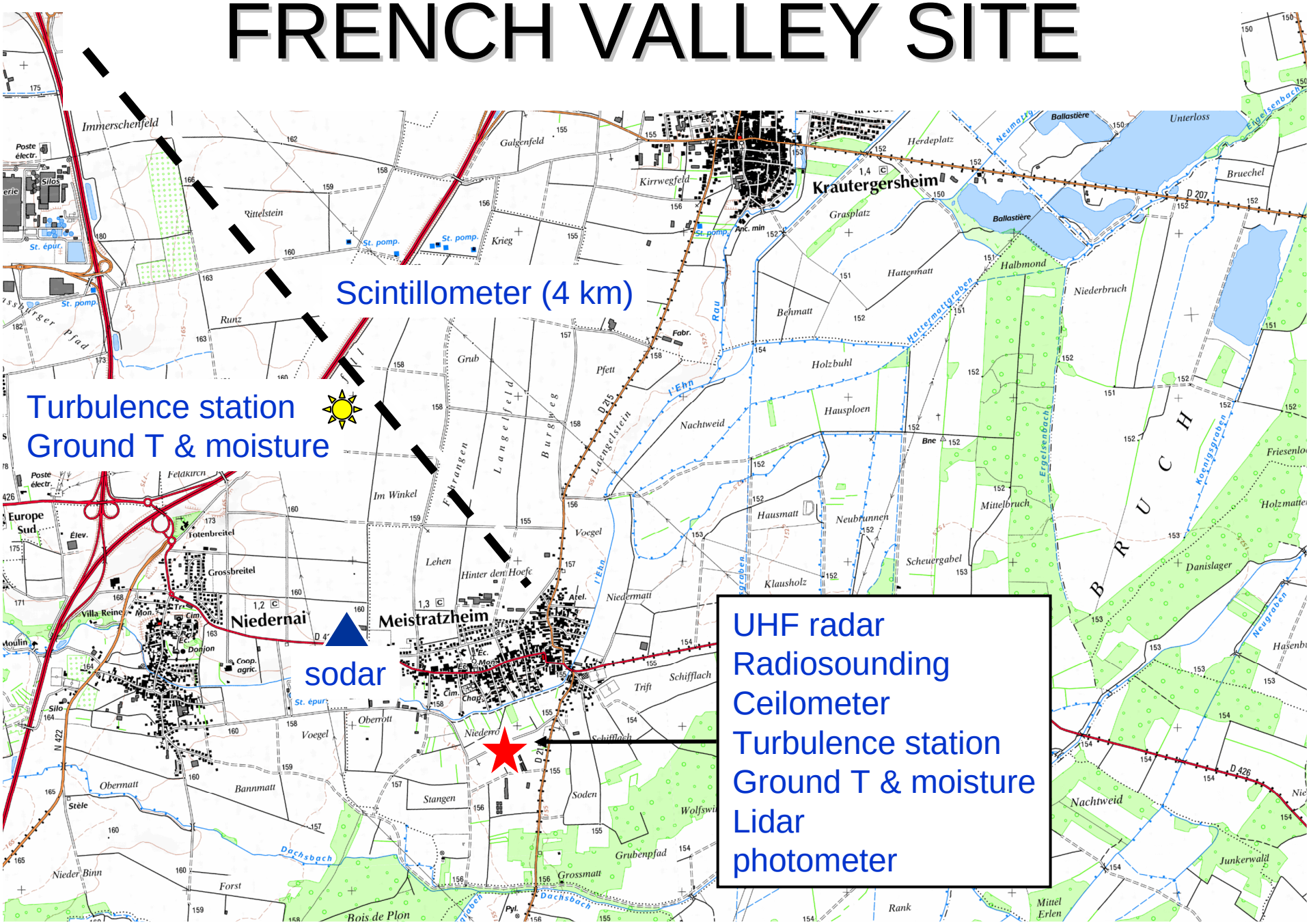
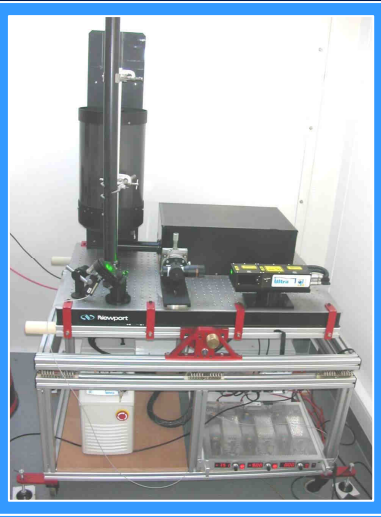
FRENCH VALLEY SITE



TReSS: Transportable Remote Sensing Station



Active Remote Sensing

Backscatter Mini-Lidar

- 532 nm //
- 532 nm ⊥
- 607 nm (Raman channel)
- 1064 nm

Passive Remote Sensing

CIMEL **Sunphotometer**
8 channels: 340, 380, 440, 500, 670, 870, 936, 1020 nm

Pyranometer, Pyrgeometer
Periheliometer

IR Radiometer
9.5-11 um

CLIMAT: a 4 channels IR Radiometer: 8-13 μm, 8.2-9.2 μm, 10.3-11.3 μm, 11.5-12.5 μm

Meteorological variables

Sonic Anemometer

In-situ

Scatterometer
920nm

Optical Particle Counter
0,15 < r < 10 um

Chemical analysis (Ions, C and dust)

Micro Rain Radar (K Band)

- Characteristics:
  - Radar reflectivity profiles up to 3 km with 100m height resolution
  - DSD spectra calculation
  - Drop fall velocity estimation
- Objectives:
  - Study of the variability of rain within a precipitating system
  - Rain rate comparison between profile and ground-based disdrometer
  - Associated Z-R relationships determination

Rhine valley (Meistratzheim):

➔ CNRM / 4-M

- RDS station
- UHF + SODAR + Scintillometer
- Surface flux stations (2)
- Soil moisture station (1)

➔ IPSL

- TReSS (Mini-Lidar + CIMEL + IR radiometers + aerosol sampler)
- Lidar Raman
- GPS station

➔ CNES

- Microwave radiometer

➔ LaMP

- K-band radar & disdrometer

➔ All instruments operating continuously whenever possible

➔ RDS (100 sondes for SOP)

- 6 RDS/days during IOPs (0600-2100 UTC)

- 1 RDS / night on 3 nights for Raman lidar calibration purpose

- 2 RDS/nights during 5 nights (Raman lidar satellite tracking – SIWV)

- 1 RDS at 1200 UTC on non-IOP days

➔ Lidars

- Avoid rainy events

➔Aerosol sampling

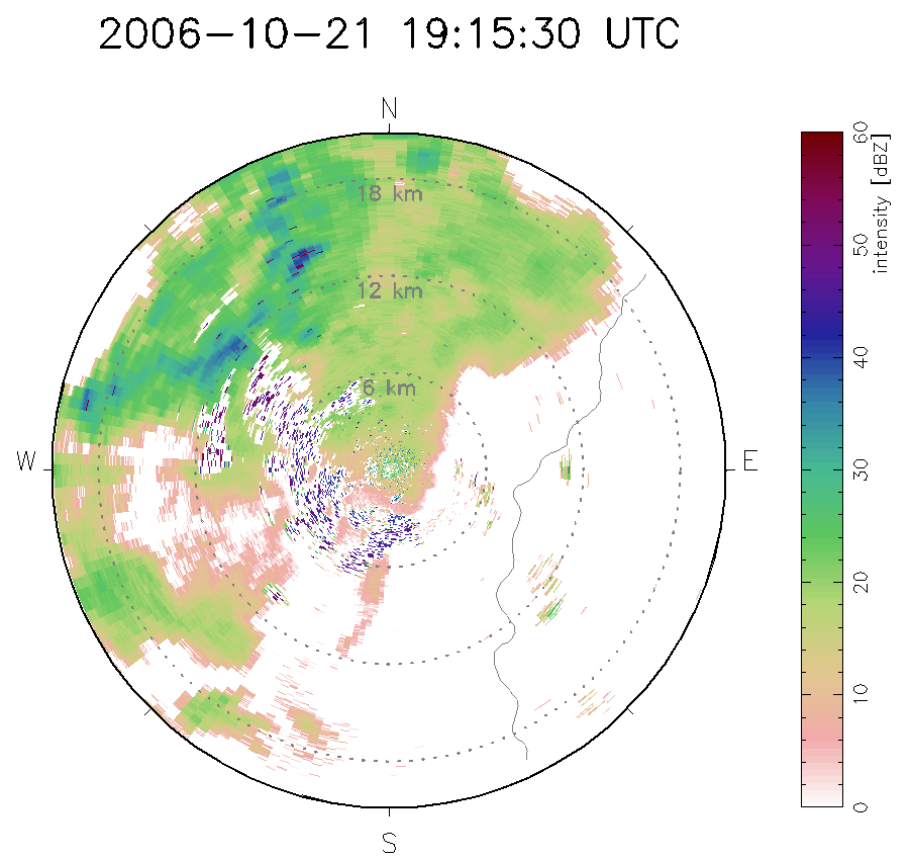
- 1 filter prior to and after a convective event

- 1 filter / day otherwise

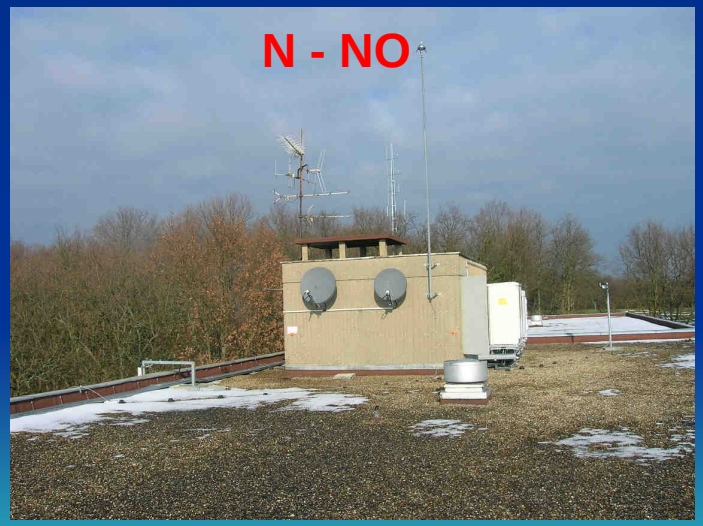
Mountain site (Bischenberg)

Precipitations Radar (X Band)

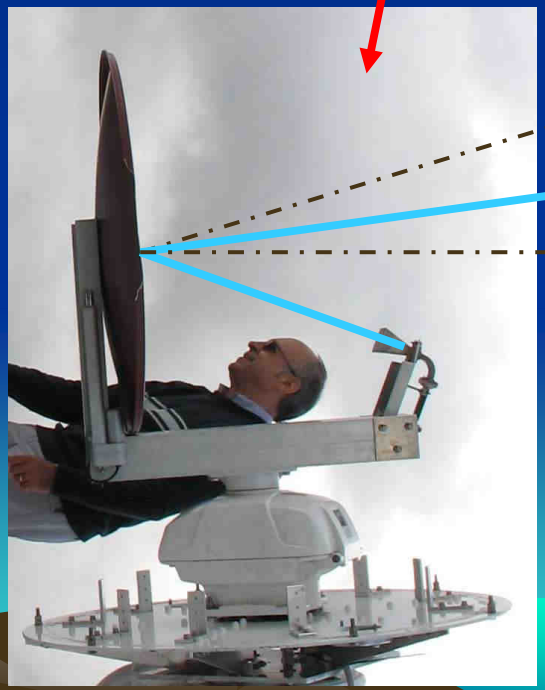
- Characteristics:
  - High spatial and temporal resolution (60 m et 30 sec.)
  - Max. range ~20 km
  - Adjustable fixed elevation 2 to 20 °
- Objectives:
  - Follow-up of precipitating systems
  - Localization and quantification of precipitations over a catchment basin
  - Study of the heterogeneity of rain within a precipitating system
  - Rain regime differentiation and Z-R relationship definition




S - O


N - NO


E - NE



Radar X :

MPI / U. Hamburg Trailer on rooftop

Telescopic mast: up to 8 m

Footprint ≈ 6 x 5 m²

CALIPSO orbits

Mountain site

Valley site

50 km

IPSL/LSCE « aerosol mobile facility »

➔ CALIPSO validation

➔ « linking » supersites

Scanning Lidar + aerosol sampler

R

H

S

M

V

Tuttlingen

Hartheim