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FINNISH METEOROLOGICAL INSTITUTE

LAPS

Analysis and nowcasting system for localized areas

Finnish Meteorological Institute
Erik Gregow

10.9.2008

Overview of presentation:

- Status report of the workpackages (WP)

  WP1: Adoption of input data
  WP2: Interface to data archive
  WP3: Configuration for HTB area
  WP4: Visualization of LAPS output
  WP5: Evaluation of LAPS
  WP6: Portability

- Planned future developments of LAPS
- Examples of visualization

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WP1- Adoption of input data

Deliverables in June 2008

Satellite:
NOAA polar orbiting

Background fields

ECMWF

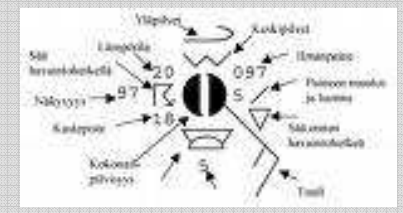
HTB:
Mast observations

LAPS

Radar: IRIS doppler

Sounding(s)

SYNOP & METAR



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WP2 – Interface to data archive

Deliverables in October 2008

- LAPS products are available every hour in following formats;

  NetCDF (Full dataset)

  GRIB1 (Not full dataset)

  GRIB2 (Not full dataset)

- Data are accessible via;

  HTB-webpage (/WORK_AREA/archive)

  RTD (Real Time Database)

  Within FMI computer facilities

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WP3 – Configuration for HTB area

Deliverables in October 2008

- Southern Finland (HTB) domain:
  Resolution 1 km in horizontal
  41 Vertical levels (every 25 hPa)
  Gridpoints: 400 * 300

- Finland domain:
  Resolution 3 km in horizontal
  41 vertical levels (every 25 hPa)
  Gridpoints: 200 * 400

- Runs operationally every hour at FMI super computer system:
  Jumbo/Sambo/Mortti/Vertti

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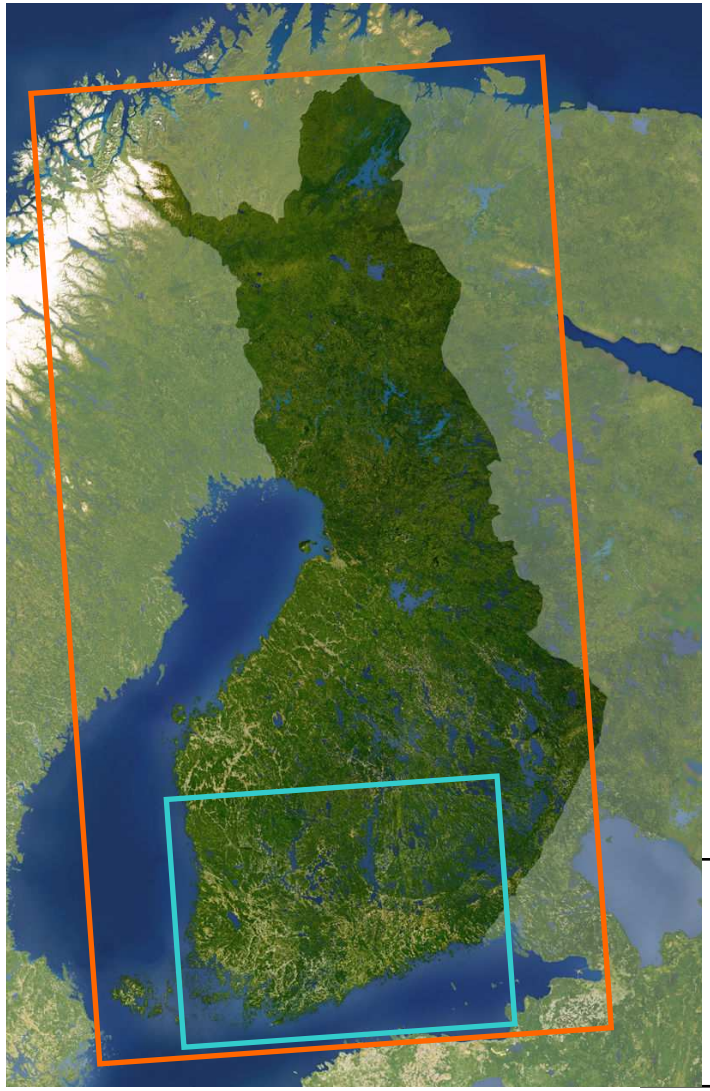
WP4 – Visualization of LAPS output

Deliverables in October 2008



- **Interactive webpages:**

HTB domain: http://laps.fmi.fi/cgi-bin/nph-laps.cgi

Finland: http://dev.laps.fmi.fi/cgi-bin/nph-laps.cgi

- **Animations at webpages:**

Helsinki Testbed domain:
http://laps.fmi.fi/history_browser-laps.php

Finland domain:
http://laps.fmi.fi/history_browser-laps-Finland.php

HTB-homepage: http://testbed.fmi.fi/

- **SMARTMET at FMI**

LAPS: Helsinki Testbed domain, 1 km res.

LAPS: Finland domain, 3 km res.

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WP5 – Evaluation of LAPS

Deliverables in December 2008

- Planned evaluation/verification by forecasters (Weather duty-, Aviation- and Commercial- forecasters) during autumn 2008.

  The aim of this survey is to answer the following questions:

  - What is the quality of LAPS output (stability, availability etc.)
  - How well does LAPS perform (compared with observations, other analysis like MESAN and forecast models like AROME, HIRLAM)
  - Is LAPS useful as now-casting tool
  - Does LAPS capture small scale phenomenas (fog, sea-breeze etc.)
  - Does LAPS bring any added value for the forecasters

- Planned verification within SISU-verification tool

WP6 – Portability: Deliverables in December 2008

- FMI has technical and practical experience on how to port the LAPS system to a some computer facilities.

- Portability is technically challenging due to different format of input data (satellite, radar, observations etc.)

- This task was mainly stipulated for Vaisala within UbiCasting project.

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LAPS – Planned future developments

- New background fields from HIRLAM
- Adopt AROME as forecast model (”hot-start”, forecasts 1-6 hours ahead)
- New satellite ingest: Meteosat 9
- More observations as input; Profilers, Road-Weather stations etc.
- LAPS products available via Mapserver, better for end-users specific needs
- LAPS as background fields to Air-Quality models (other models…)
- Collaboration between other European LAPS-users on common topics

Examples of visualization

via webpages…

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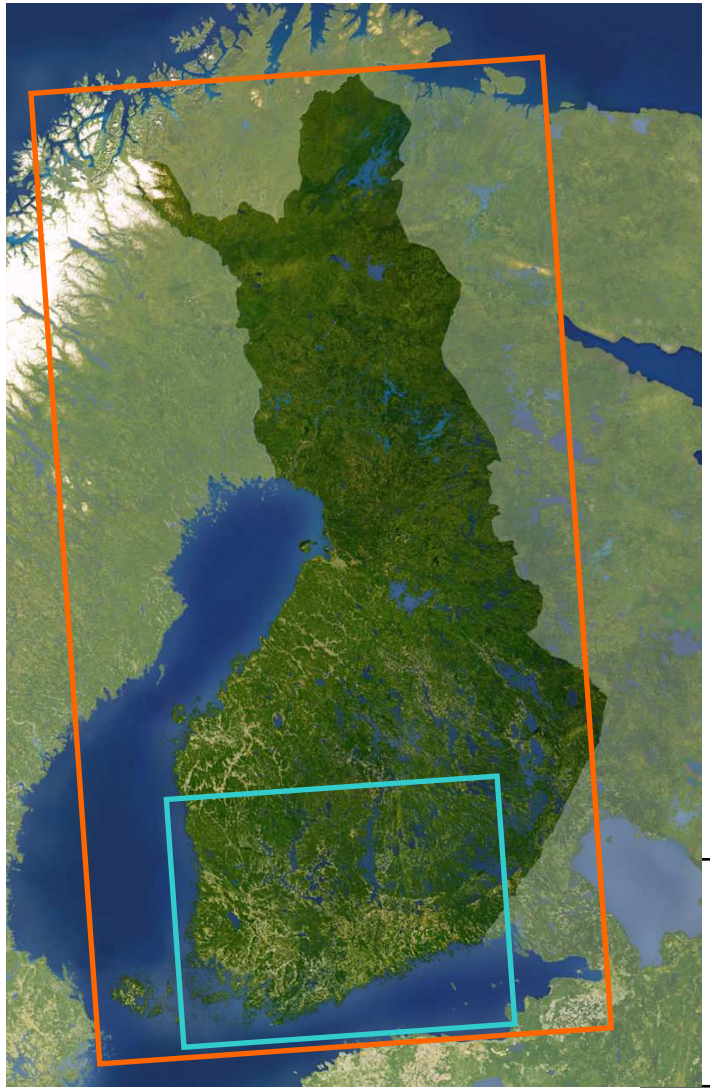
WP4 – Visualization of LAPS output

Deliverables in October 2008



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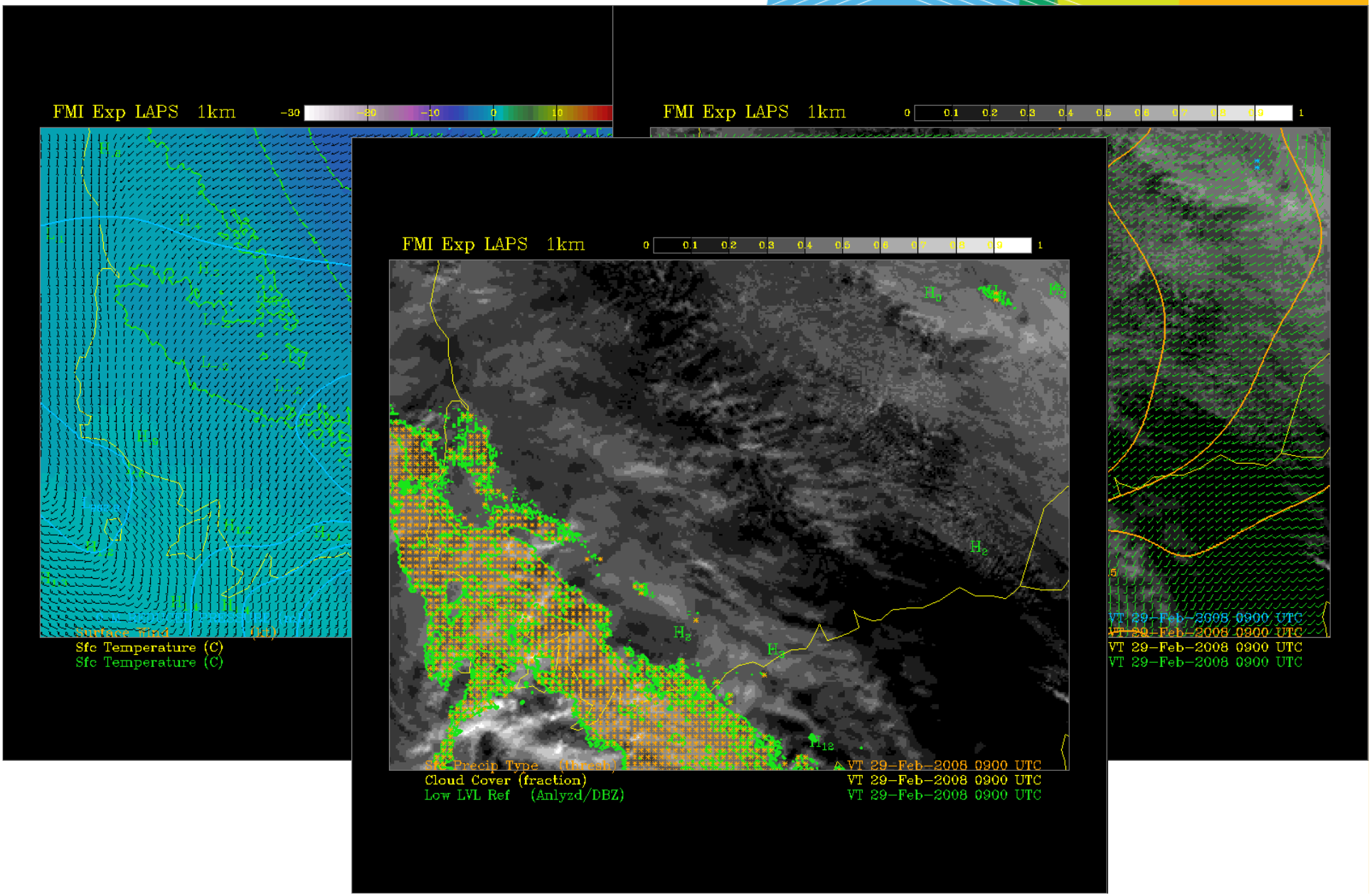

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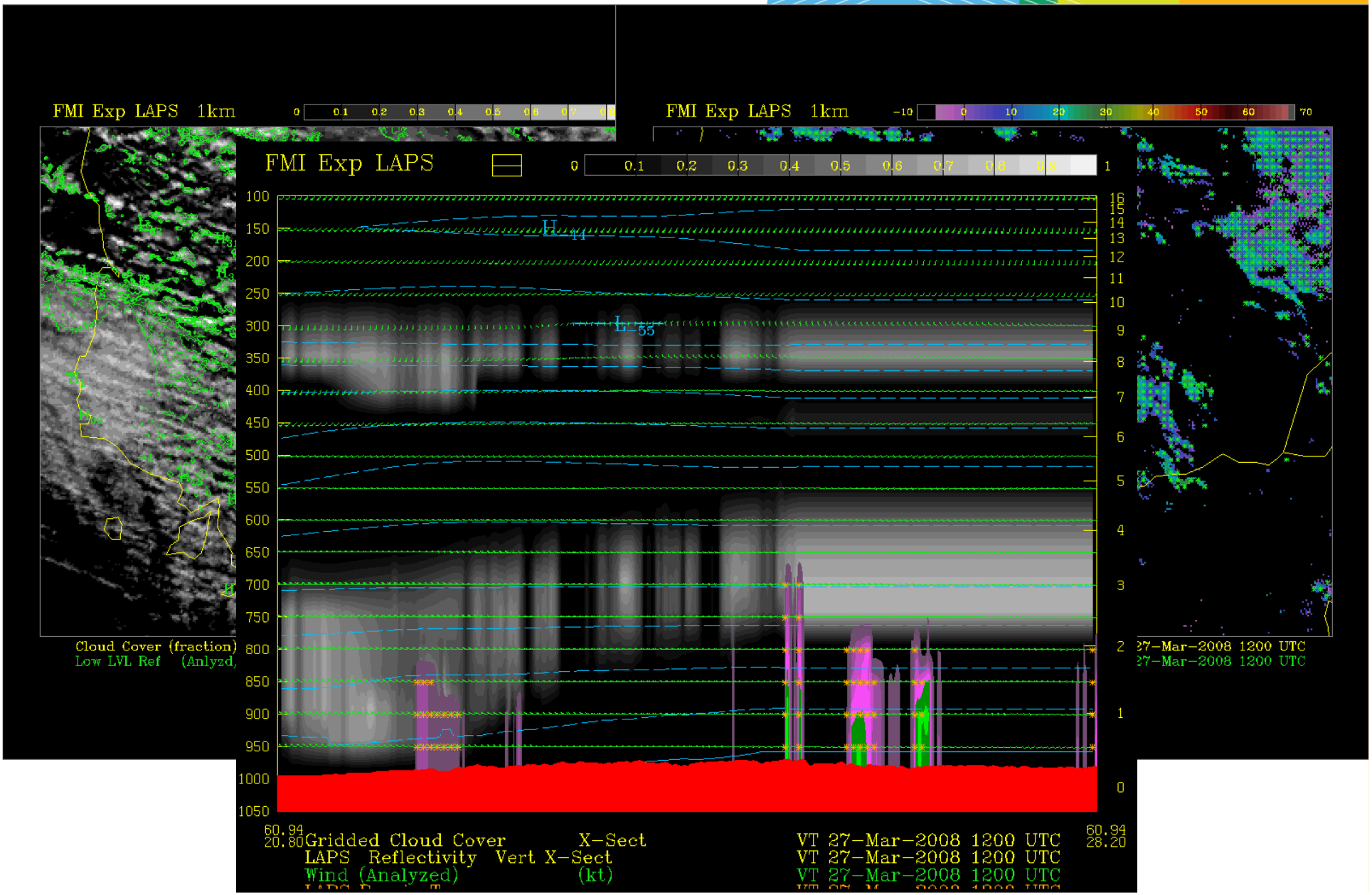

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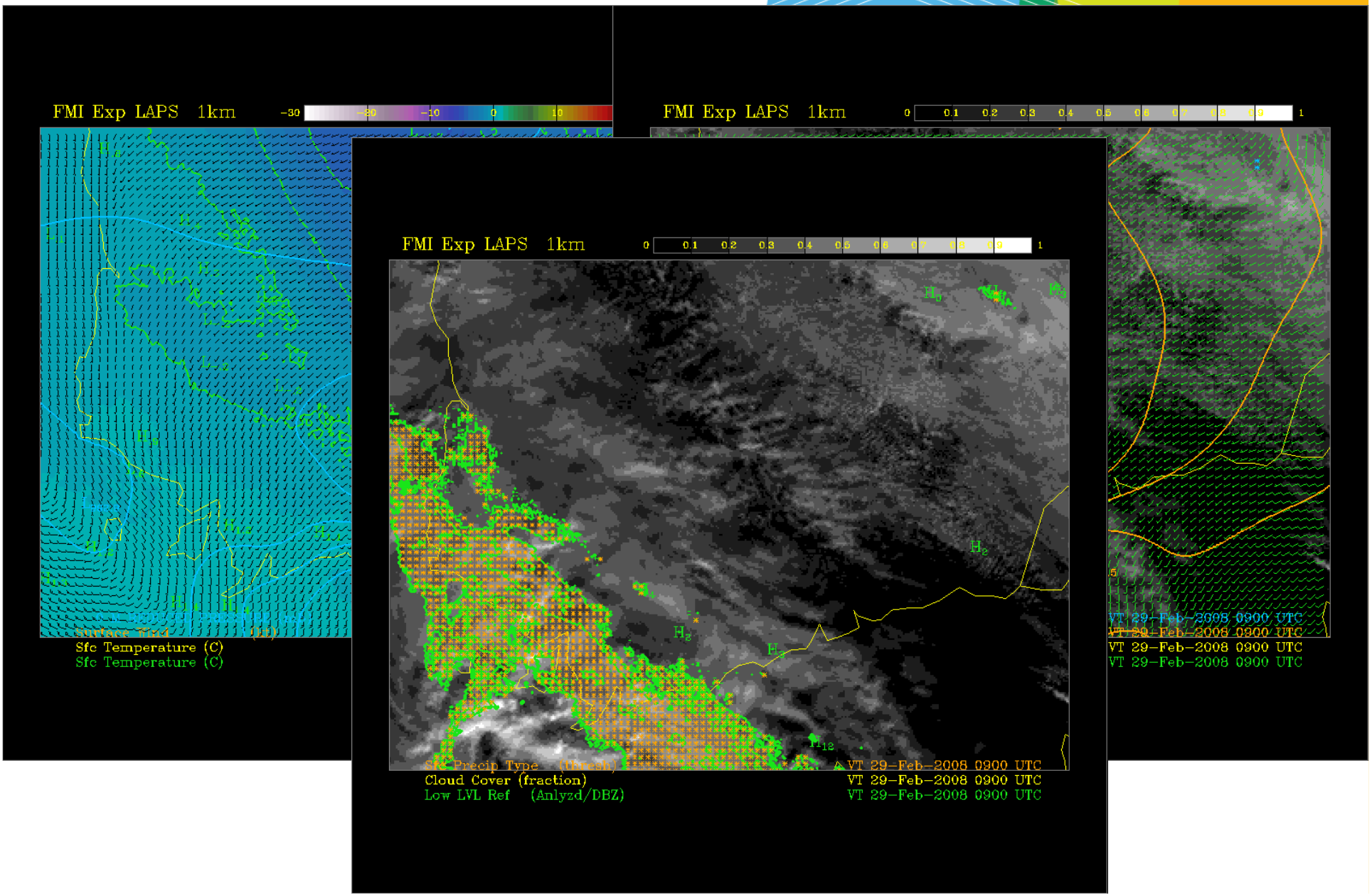
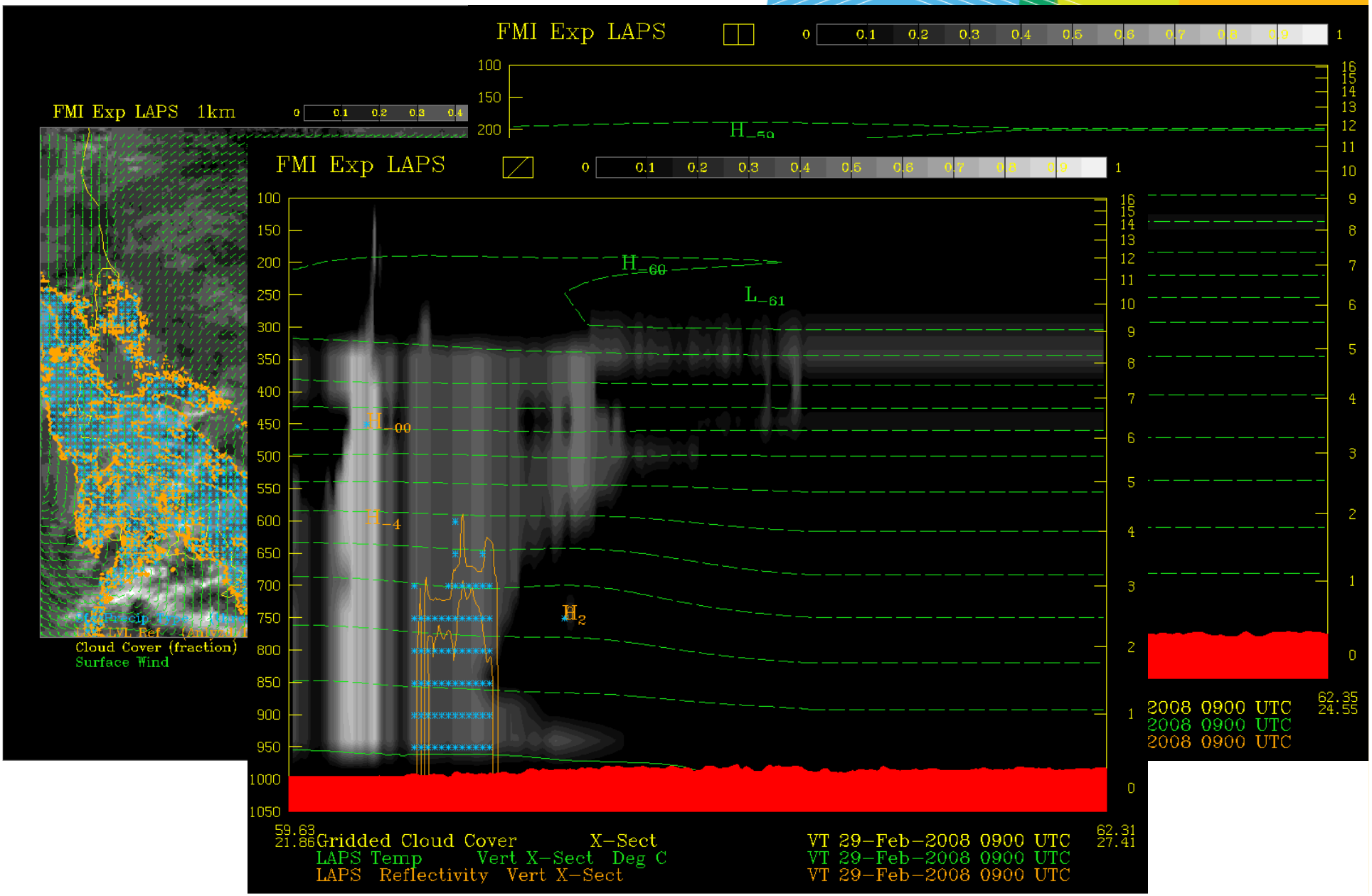
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