Modelling Of Air Pollution From Regional To Urban Scale:

DMI-CAC

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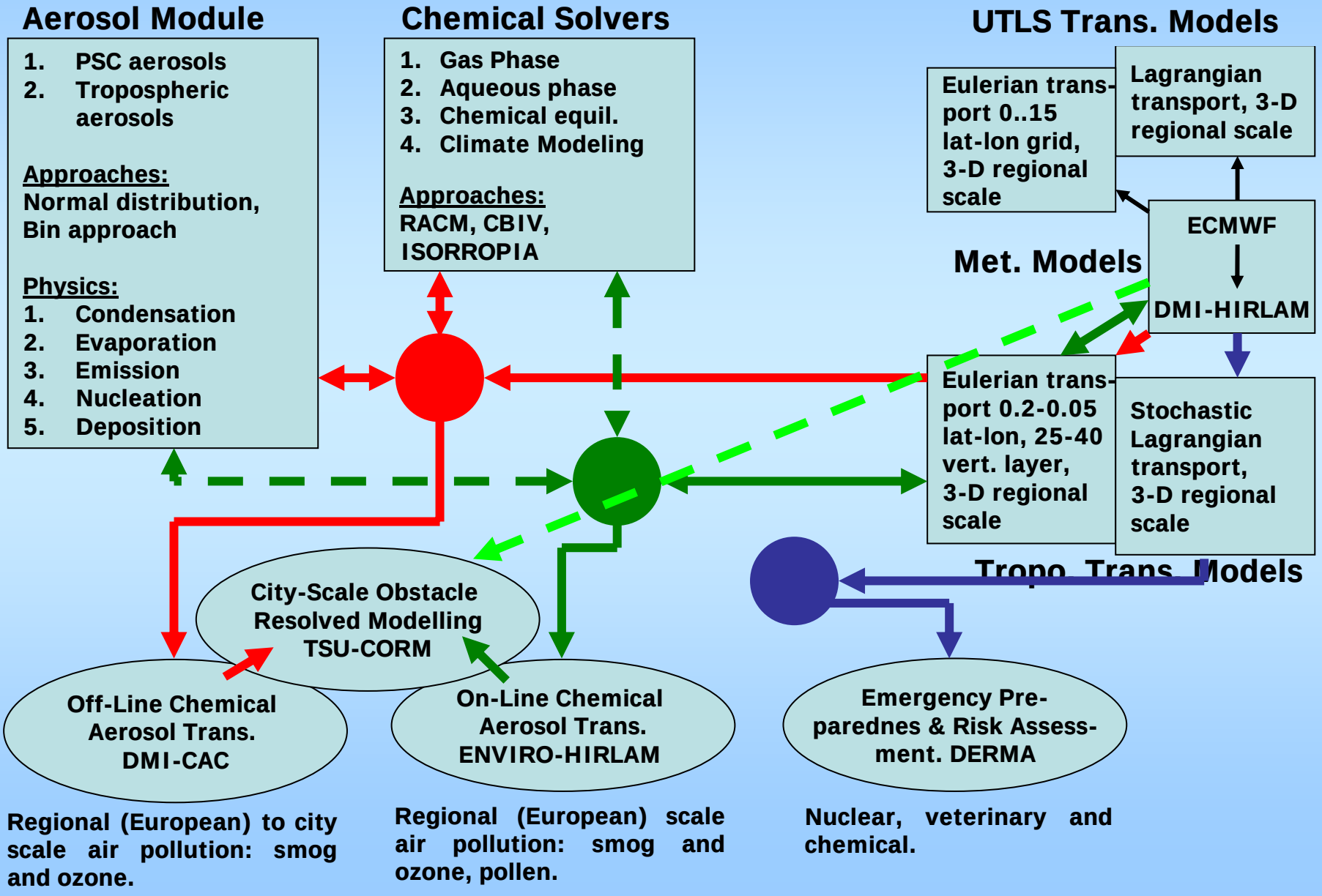
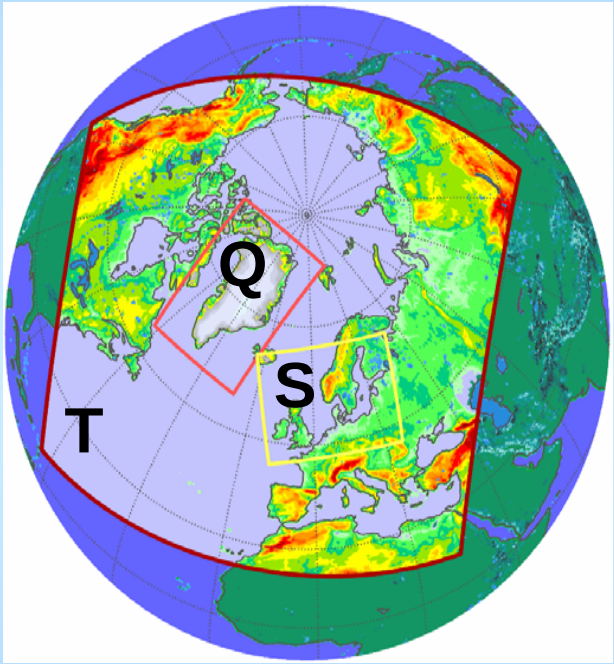
Air Pollution Modeling At DMI



DMI-HIRLAM

Currently nested versions of HIRLAM:

- T – 15x15 km^2, 40 vertical layers.
- S – 5x5 km^2, 40 vertical layers.
- Q – 5x5 km^2, 40 vertical layers.
- Test version of 1.5x1.5 km^2 of DK.



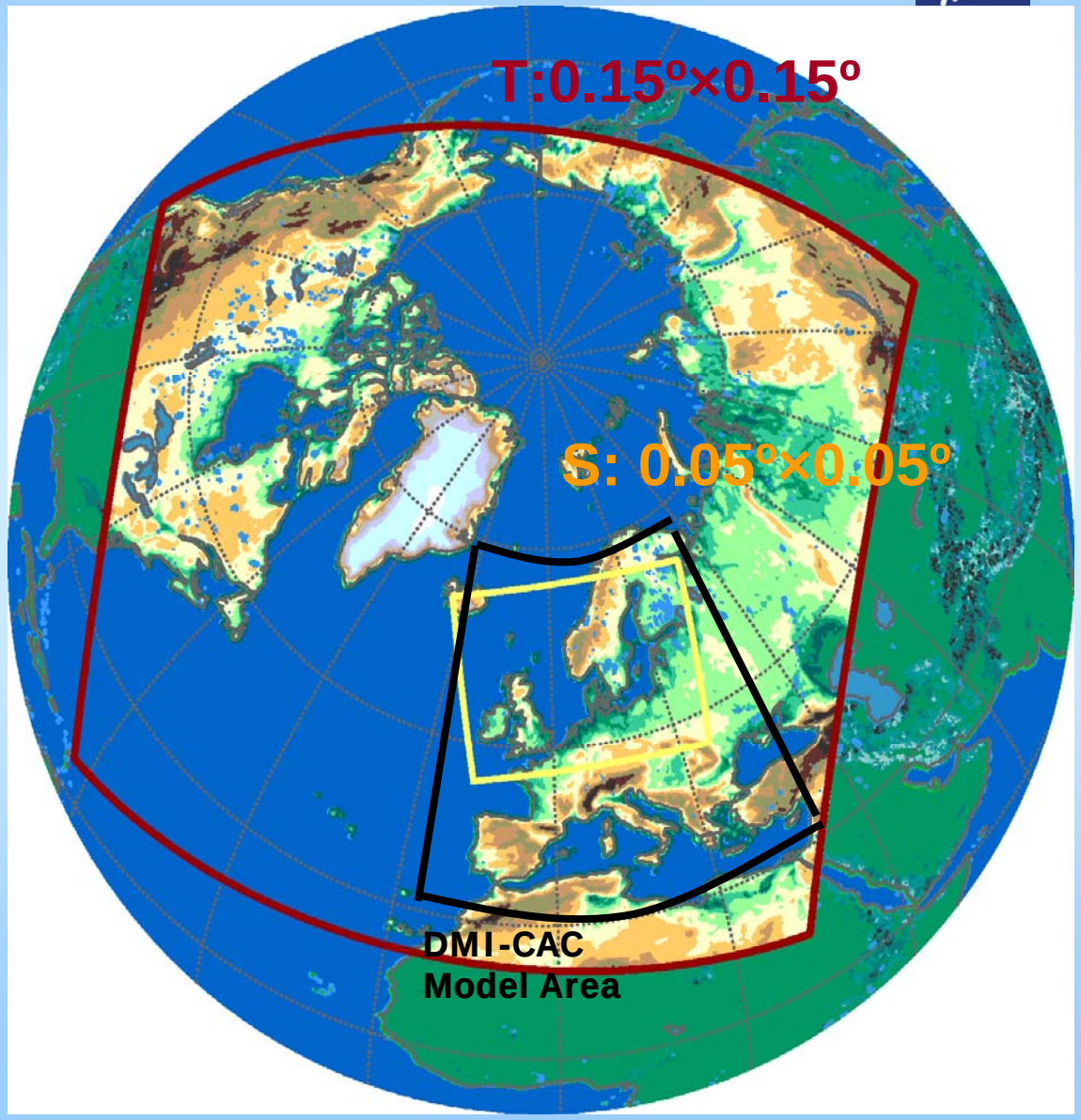
A forecast integration starts out by assimilation of meteorological observations whereby a 3-d state of the atmosphere is produced, which as well as possible is in accordance with the observations.

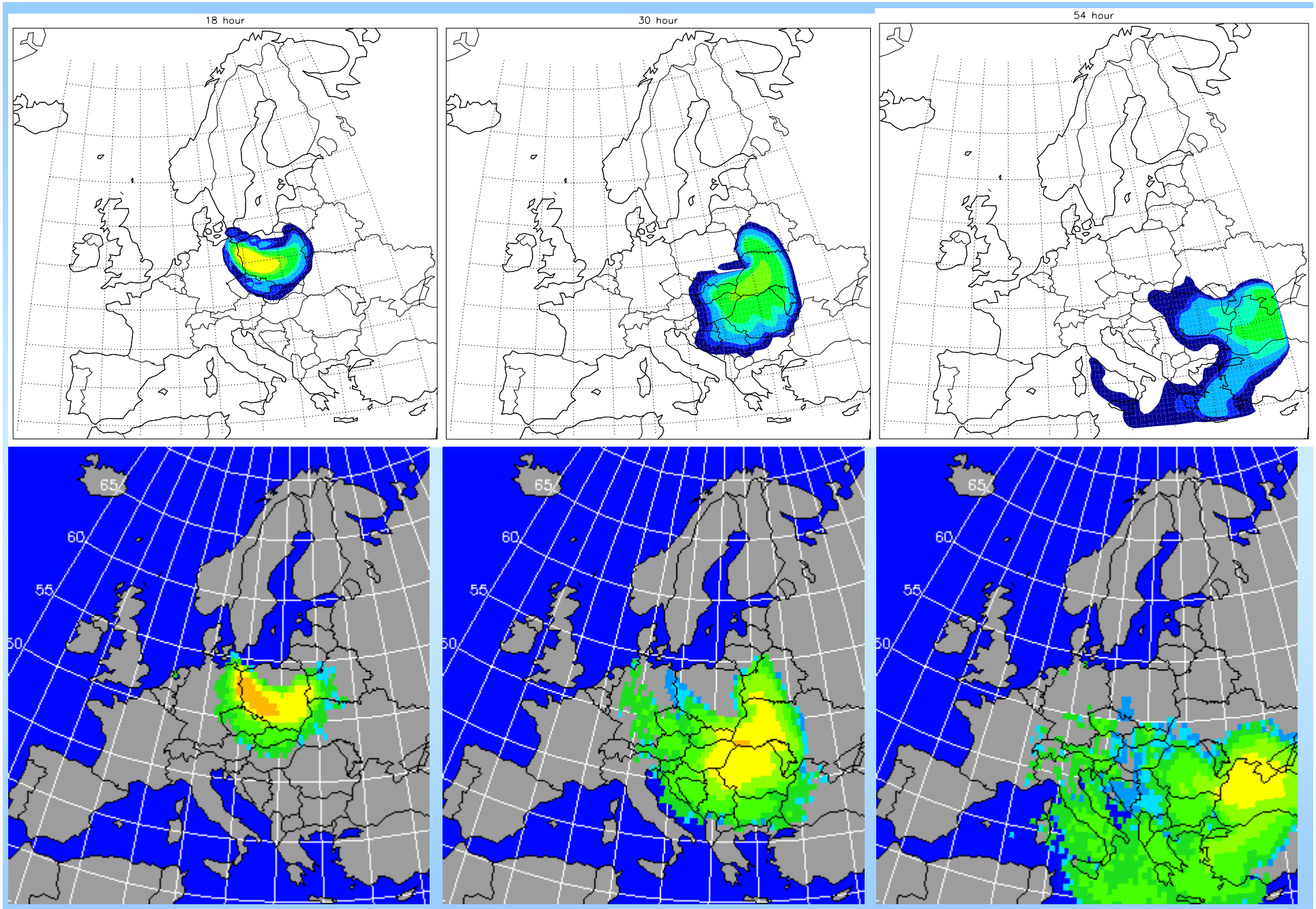
A numerical weather prediction system consists of pre-processing, climate file generation, data-assimilation and analysis, initialization, forecast, post-processing and verification.

Off-Line modelling with DMI-CAC

Simulation domain

Horizontal resolution
0.2º×0.2º.



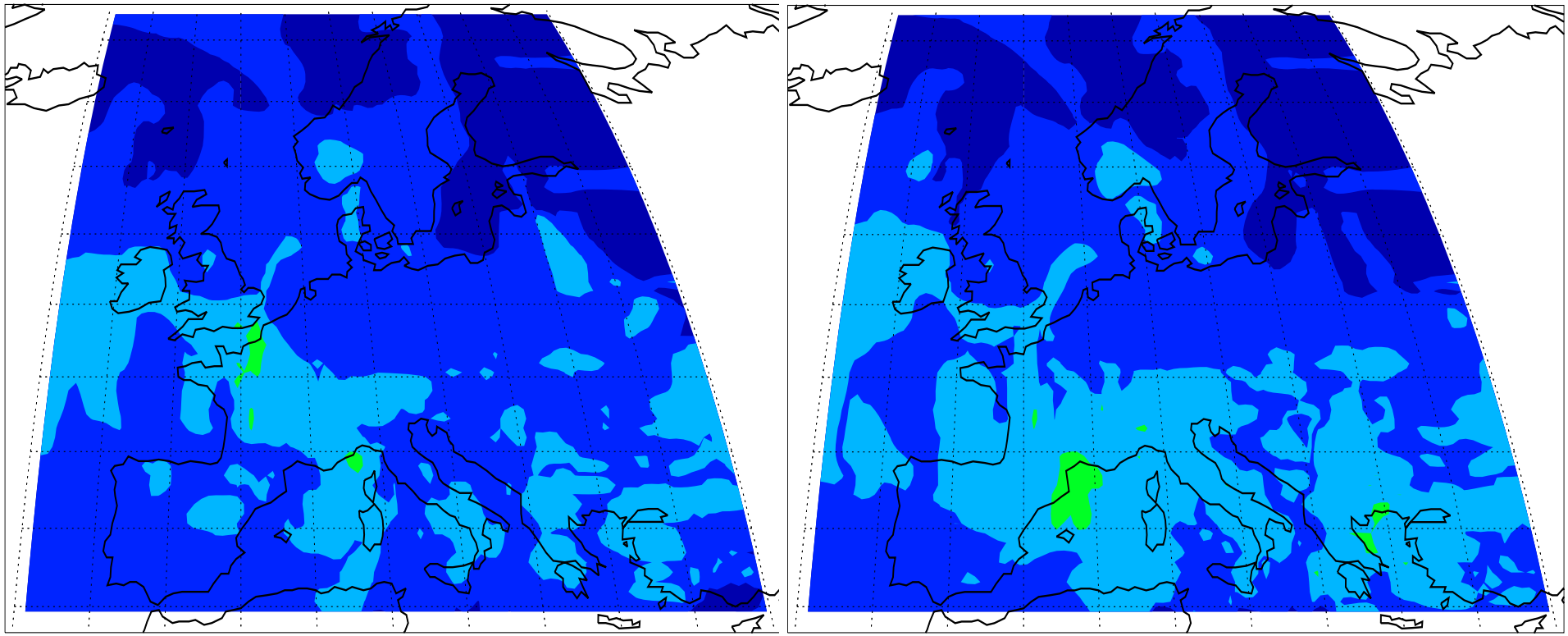


Ensemble: DK3, DE1, FR2, CA2

Ozone

36 hour forecast

48 hour forecast



ppbV

0 15 30 60 90 120 150

Pre-operational forecasts 4 times a day of

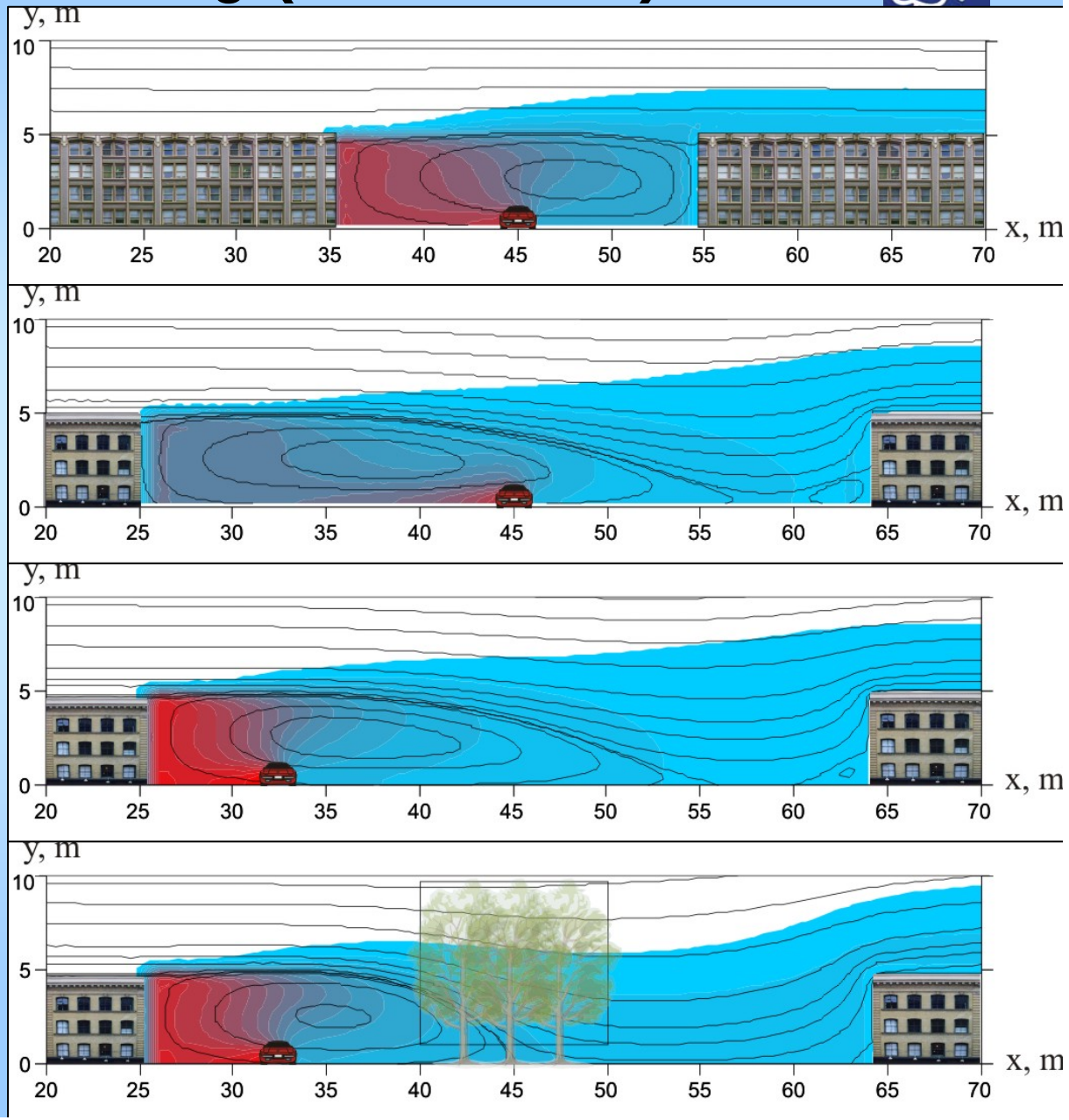
O_3, NO, NO_2, CO, SO_2, Rn, Pb, “PM2.5”, “PM10”.

City-Scale Obstacle-Resolved Modeling (TSU-CORM)

Streamlines and air pollution conc

3 d. fluid dynamic air pollution model

<u>Resolution:</u>
Horizontal: 1x1 m²
Vertical: from 1m



Will be implemented spring 2007 at DMI and linked with DMI-HIRLAM, CAC and /or ENVIRO-HIRLAM.