

Detailed flow, hydrometeor and lightning characteristics of an isolated thunderstorm during COPS

by K. Schmidt, M. Hagen, H. Höller, E. Richard, and H. Volkert

The supplement's zip-file contains 4 **movie-loops** and a **directory 4levels-rad-mod** with 18 jpg-files of combined radar-model flow at four different altitude levels.

These pieces of viewing software were tested:

- 1) **mplayer** and **qiv** (quick image viewer) under Unix;
- 2) **MediaPlayer** and **IrfanView** under Windows

Contents in detail:

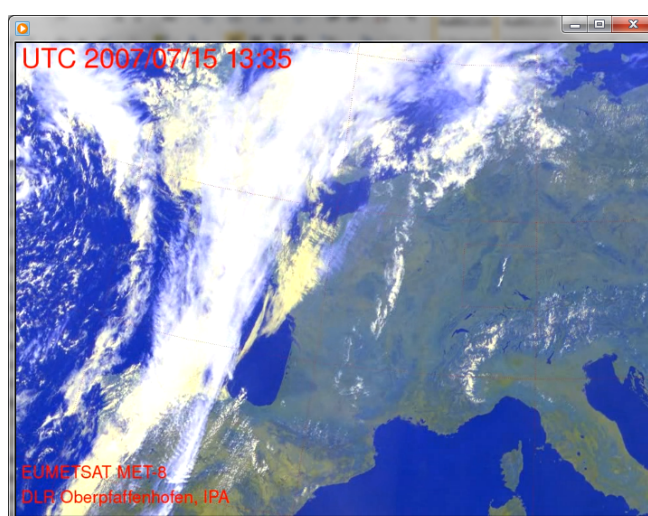
movie1.mpg

containing 145 multi-channel images of western and central Europe in stereographic projection

period 06:00 to 18:00 UTC at 5' intervals

nominal display speed 14 frames per second (4200-fold speed-up)

example for 13:35 – narrow, nearly contiguous cloud line roughly along the Black Forest crest-line well ahead of wide frontal cloud-bands extending from the North Sea to the bay of Biscay



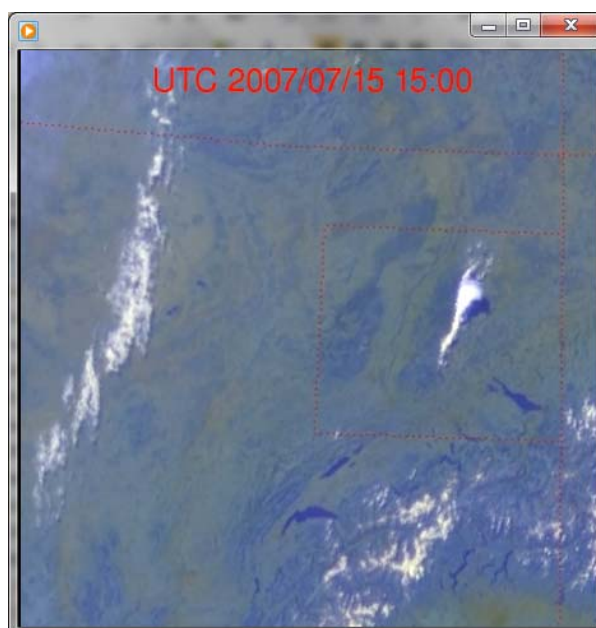
movie2.mpg

containing 97 multi-channel images of COPS area (framed by red dots) and surroundings in stereographic projection

period 10:00 to 18:00 UTC at 5' intervals

nominal display speed 7 frames per second (2100-fold speed-up)

example for 15:00 – curved anvil with shadow on the ground extending towards the north-east from the towering thundercloud at the middle of the cloud line



movie3.mpg

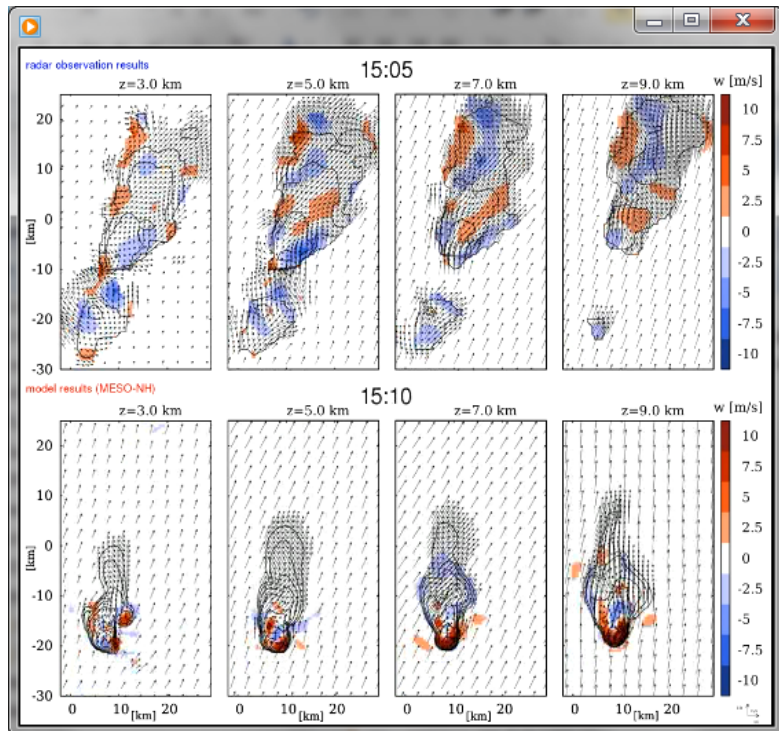
juxtaposition of

18 simulated flow fields in 4 altitudes (3, 5, 7, 9 km) for the period 14:15 to 15:40 UTC at 5' intervals (lower half) and

4 triple-Doppler flow fields in 4 altitudes (3, 5, 7, 9 km) for the nominal times 14:35, 14:50, 15:05, and 15:20 UTC (upper half); the frames are repeated once before and after their nominal times to synchronize with the simulation results; for the first and the last 15' interval the colored vertical motion fields are suppressed.

See Figures 3 and 14 for further explanations.

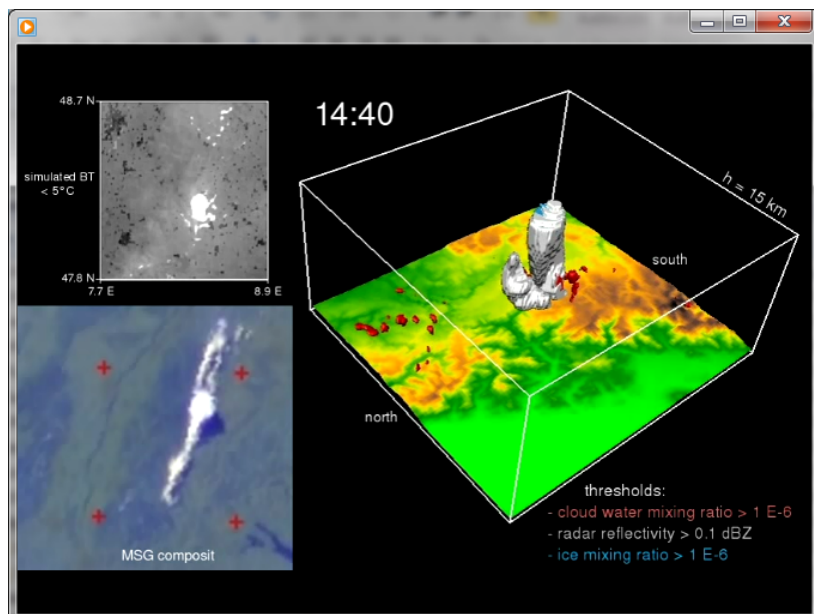
example – simulation result for 15:10 with repeated radar analysis valid for 15:05 (file `4levels-rad-mod_1510.jpg` in the directory mentioned below)



movie4.mpg

loop over 48 triple image scenes as in Figure 15 for the period 12:05 to 16:00 at 5' intervals

example – phase of rapid development at 14:40



Directory `4levels-rad-mod` with 18 files named `4levels-rad-mod_<hhmm>.jpg` with $1415 \leq \text{hhmm} \leq 1540$ for every 5' model-time

These single images, making up **movie3.mpg**, aid detailed inspections and comparisons.