CSIP and UK involvement in COPS

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(Apologies for absence: greetings from CSIP)

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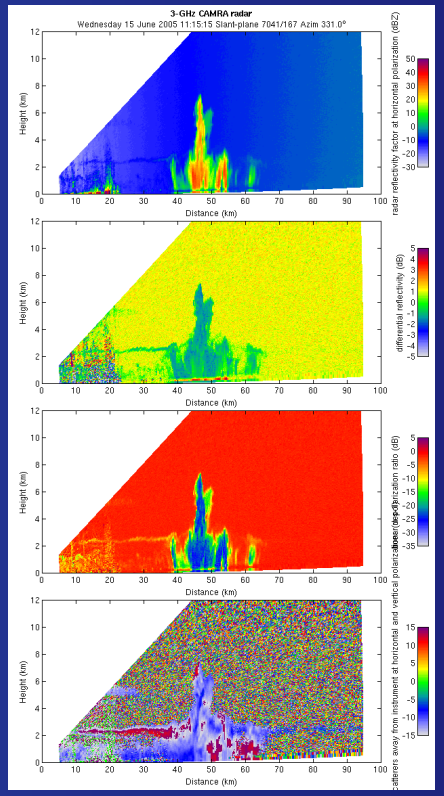
Summary of CSIP 2005

3 IOPs so far.

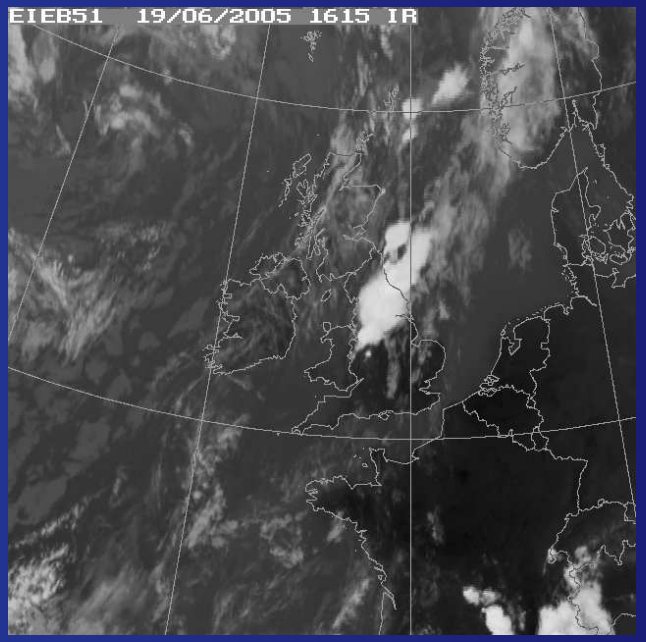
IOP 1: 15 June – strong lid; warm rain; convergence line; cold pool

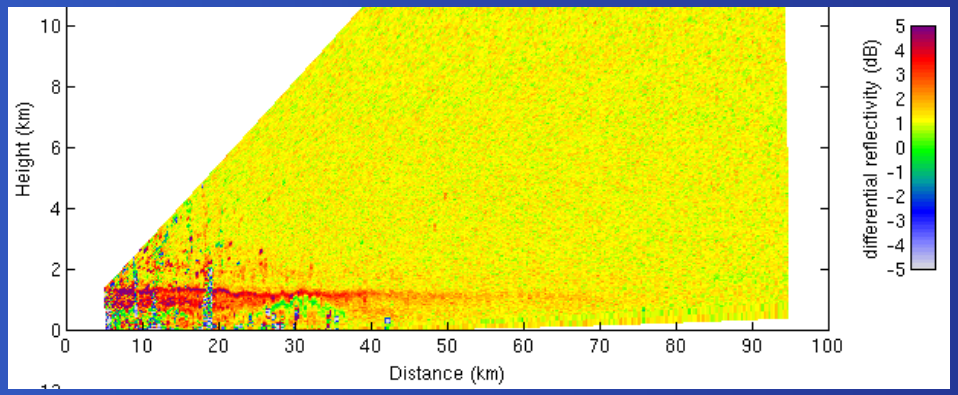
- Scattered light warm-rain showers occurred behind a front, mainly along a convergence line
- A major lid at about 3 km constrained the depth of the convection
- The lid may have been lifted about 500 m higher over a 20 to 30-km wide strip along the convergence line
- At least one thunderstorm penetrated the lid possibly where the convergence line and an upper-level vortex coincided



IOP 2: 19 June 2005 – A null case!

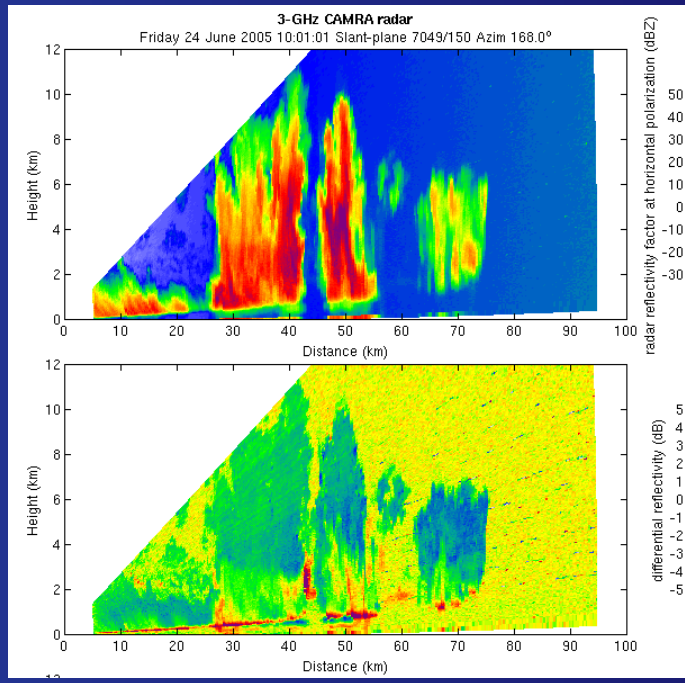
- Intense thunderstorms broke out along a line in the midlands of England (golf-ball size hail and flash-flooding near Leeds!)
- In the CSIP domain, a few cumulus clouds eventually formed in the west, but they were strongly capped by the lid at 2 km
- The radar RHI scans showed some evidence for localised deepening of the boundary layer in a N-S oriented region that moved gradually north





IOP 3: 24 June 2005 – Severe thunderstorms

- Severe thunderstorms developed during the night and continued to form ahead of a front throughout the day: tornado near Coventry; music festival flooded; CSIPers on p5 of *The Daily Telegraph*!
- High θ_w air overlayed cold air; the storms developed from about the 800 mb level
- Storms mostly developed at the south coast
- One mesoscale model forecast that the front would clear and thunderstorms would then be initiated from the Boundary Layer. However, that did not happen
- Turrets were often tall and skinny. Cloud tops were about 12 km, cloud base about 2 km (12 deg C) and the melting level was about 3.5 km
- Lightning was observed in many of the clouds. A few cells had supercooled raindrops



Tall skinny turrets with 50 dBZ (top); Positiv

Z_{DR} *above melting level (bottom)*

UK contribution to COPS

- Proposed UFAM Instruments:
  - Tether balloon with tether sondes
  - 3 Sodars
  - Sounding systems (2 - possibly 3)
  - Doppler Lidar
  - Wind Profiler
  - Ozone and aerosol Lidar
  - Cessna aircraft
- FAAM 146 - conflicts, but possible. Met Office interested.
- DO-228 - possible

Proposal to be submitted to NERC for 1 December 2005 deadline; decision by June 2006