Observations of Shallow Convection Over the Black Forest During COPS

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COPS: UK objectives

- To understand the processes leading to the initiation of deep convection over steep and complex terrain
- To understand the pathways by which air is drawn into growing convective cells, both over the mountain range and through the valleys
- To quantify the fluxes of boundary layer aerosols into convective cells over the mountains
- To understand the role of aerosols in the cloud microphysical processes over the mountains
The main valleys studied during COPS.
Flight Planning
15th August 2007
17th August 2007

Cumulus layer
Conclusions

- Boundary-layer Observations mainly concerned weakly stable cumulus topped conditions.
- $\sigma_w$ and heat flux tend to decrease towards the top of the boundary layer where turbulence consists of more isolated large eddies.
- At larger horizontal scales (> few km) turbulence has the characteristics of gravity waves.
- Disturbances are stronger over the mountains than over the plain but only at longer wavelengths (> few km).
- Greater evidence of gravity waves over the mountains than over the plain.