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COLPEX – Cold Pool Experiment

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Planning has started towards designing a new field campaign aimed at studying the behaviour of the boundary layer over complex terrain. Of specific interest is the formation of cold-pools in valleys during stable night-time conditions. The field campaign will run continuously until the end of the winter in 2009/10. The experiment will make use of a wide variety of ground-based sensors including turbulence towers, automatic weather stations, Doppler lidar, radiation sensors and soil temperature probes. We also hope to deploy an instrumented car and a tethered balloon facility for limited periods.

Data from the field campaign will be used for a number of purposes. Firstly, to increase our understanding of how the valley cold pools form and why, for instance, some valleys offer a more favourable environment for their formation than others. Secondly, to investigate the formation and dissipation of fog in complex terrain. Thirdly, the data set will also be used to help validate and develop the Met Office Unified Model at high resolution.

An area for the experiment has been identified in the Shropshire/Powis area of the UK where a network of valleys and low hills exist with a typical valley width of ˜1.5km and hill top to valley floor heights of 75-200m.
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