



Numerical modelling of cold air pools

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Valley cold air pools which form on calm, clear nights in undulating terrain represent a significant hazard, enhancing the likelihood of road-ice formation and crop damage. Such cold pools are difficult to forecast since the terrain in question is generally smaller than the horizontal resolution of numerical weather prediction (NWP) models, with forecasters instead relying on temperature post-processing techniques. In larger terrain also, the behaviour of cold air pools remains complex and difficult to model and understand. Idealised model simulations will be used to investigate the behaviour of nocturnal valley cold air pools for different valley geometries and external conditions, with the aim of developing ways in which forecasting techniques can be improved.