



## **An orographic flow diagramme**

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Motivated by the need to relate some key features of atmospheric flow over mountains to the elevation of the inversion and wind speed, many numerical experiments are made in order to create a diagramme a la Vosper (2004). The simulations are carried out with the WRF model and stationary boundary-conditions. A neutral boundary-layer is capped by a 10K inversion, of which the height varies. The mountain is 1 km high and the incoming winds are 10,15 or 20 m/s. The surface has  $z_0=0.1\text{m}$ .

Vortices, vortex shedding, lee waves and hydraulic jump are detected and related to values of the height of the inversion and the Froude number. Cases of real flow are compared to the idealized results.