Geophysical Research Abstracts
Vol. 12, EGU2010-7939, 2010
EGU General Assembly 2010

Advection of lee-side shed vortices over Reykjavík

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On 12 August 2009 satellite images showed the asymmetric shedding of lee-side vortices from Mount Snæfellsjökull on the Snæfellsnes peninsula in West-Iceland. The vortices were advected to the southeast by the ambient flow, across the Faxaflói bay. They passed over Reykjavík 3-4 hours after their generation. Inland, the vortices were presumably disrupted and their vorticity dissipated in the convective boundary layer.

Winds were approx. 8 m/s from the northnortheast in a well mixed boundary layer, capped by a sharp inversion at 900 hPa, well below the top of Mt. Snæfellsjökull. A thin layer of stratus clouds topped the boundary layer, above which the air was dry and stably stratified.

Here, the vortices are explored using satellite images and surface based observations as well as a mesoscale atmospheric model. A series of satellite images show the generation and advection of the vortices. Automatic observations of wind and solar radiation in Reykjavík document the passage of a vortex aloft and its progression inland. At the surface, the passing of the vortex is associated with a short and local clearing in the cloud cover as well as transient changes in the wind speed and direction.