



## Vortices downstream of Greenland and Mt. Snæfellsjökull

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Slow-flow vortices downstream of Mt. Snæfellsjökull in W-Iceland are explored by means of conventional surface observations, satellite images and numerical simulations.

The vortices form in weak winds with an inversion below mountain top level. Unlike the typical Jan-Mayen vortex street, the Mt. Snæfellsjökull vortices only have anticyclonic circulation. Numerical tests reveal that by introducing symmetry in the topography, the downstream flow transforms from a wake with shedding vortices to a weak wavy wake.

On a larger scale, the stratification of the atmosphere leading to conditions favourable for the vortex creation at Mt. Snæfellsjökull appears to be result of cold barrier flow from E-Greenland capped by westerly flow, descending at the east coast of S-Greenland. There is a peak in frequency of northwesterly flows with inversions in the spring, coinciding with the maximum extent of the sea ice.

Thus, the Mt. Snæfellsjökull vortices appear to be a result of a two-step process; first, Greenland contributes to a favourable layering of the atmosphere, secondly, the favourable-layered atmosphere impinges the Mt. Snæfellsjökull.