



Four-dimensional structure of gravity waves in a windstorm

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The four-dimensional structure of gravity waves in a windstorm in NW-Iceland is studied with satellite observations, ground-based wind observations and a high-resolution numerical simulation. The waves break at mid-tropospheric levels and their energy is partially dispersed in a direction perpendicular to the flow. The steepness of the waves and the intensity of the breaking is closely linked with the shape of the orography and the temporal variations are linked with variations in the low level winds. The results will be compared to existing theories of gravity waves and discussed with respect to weather forecasting.