

Research Project, 2011.

Analysis of an Extratropical Storm

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The aim is to construct a case-study of an extratropical storm that affects Ireland during the period January-July 2011.

The overall content should be similar to previous studies of extratropical storms, such as:

- **The “Edmund Fitzgerald” storm over the Great Lakes in 1975 (Ackerman and Knox)**
- **“Xynthia” in France in February 2010 (Ian Considine)**
- **The case study in Chapter 8 of Wallace and Hobbs.**

All the available data should be considered:

- **SYNOP Reports (www.ogimet.com)**
- **UCD Automatic Weather Station (MCC)**
- **Radiosonde Ascents (University of Wyoming)**
- **Radar Images (<http://www.meteox.com/>)**
- **Analysis Charts (Univ. of Washington. UKMO. Wetterzentrale, etc.)**
- **Forecasts from HIRLAM, COSMO, UKMO, GFS, etc.**
- **Satellite Imagery (GEO and LEO) (Dundee. Eumetsat)**
- **Any other relevant data.**

The dynamical processes that contribute to the development of the storm should be discussed:

- **baroclinic instability**
- **thermal advection**
- **vorticity advection**
- **frontal models**
- **upper level divergence**
- **conveyor belts, etc, etc.**

The accuracy of the various sources of NWP guidance should be assessed and compared.

A report should be written presenting the results.

[Possible case for study: The Obama storm, 22-23 May 2011, together with the Grimsvotn volcanic ash dispersal.]