

3. November 2008, Oslo, 30 min's

Changes in storm occurrence over Northern-Central Europe

Hans von Storch

The assessment of changing storminess is hindered by the inhomogeneity of wind-data, i.e., changes in wind statistics over the years do not necessarily (and, indeed: rarely) reflect changes in regional wind conditions, but are contaminated by various local and non-meteorological factors, such as changing land-use, changing instrumentation and analysis practice. Instead, so-called proxies are employed to assess changing wind and storm statistics. Such proxies must represent storm statistics, and must not be affected by changes in the environment and in the observational practice. Unfortunately, economic damages can not serve for this purpose, but statistics about the frequency of low air pressure readings, strong spatial pressure gradients or deep short term pressure falls are useful proxies. They have been used in several studies for Northern Europe and Eastern Canada. An alternative is to derive storm indicators with regional climate models, which process homogeneously analyzed information about the large-scale circulation. Also this approach has successfully been used in the North Atlantic sector.

In all cases, an intensification of storm activity was detected for the time of about 1970-1990; however, the trend has reversed since in both the proxy and the model studies; before the 1970s there was a long-term decrease in Northern Europe; in Eastern Canada there were equally phases of intensification and weakening, and no systematic change could be detected so far – which is –at least in Europe – consistent with model projections for the rest of this century.