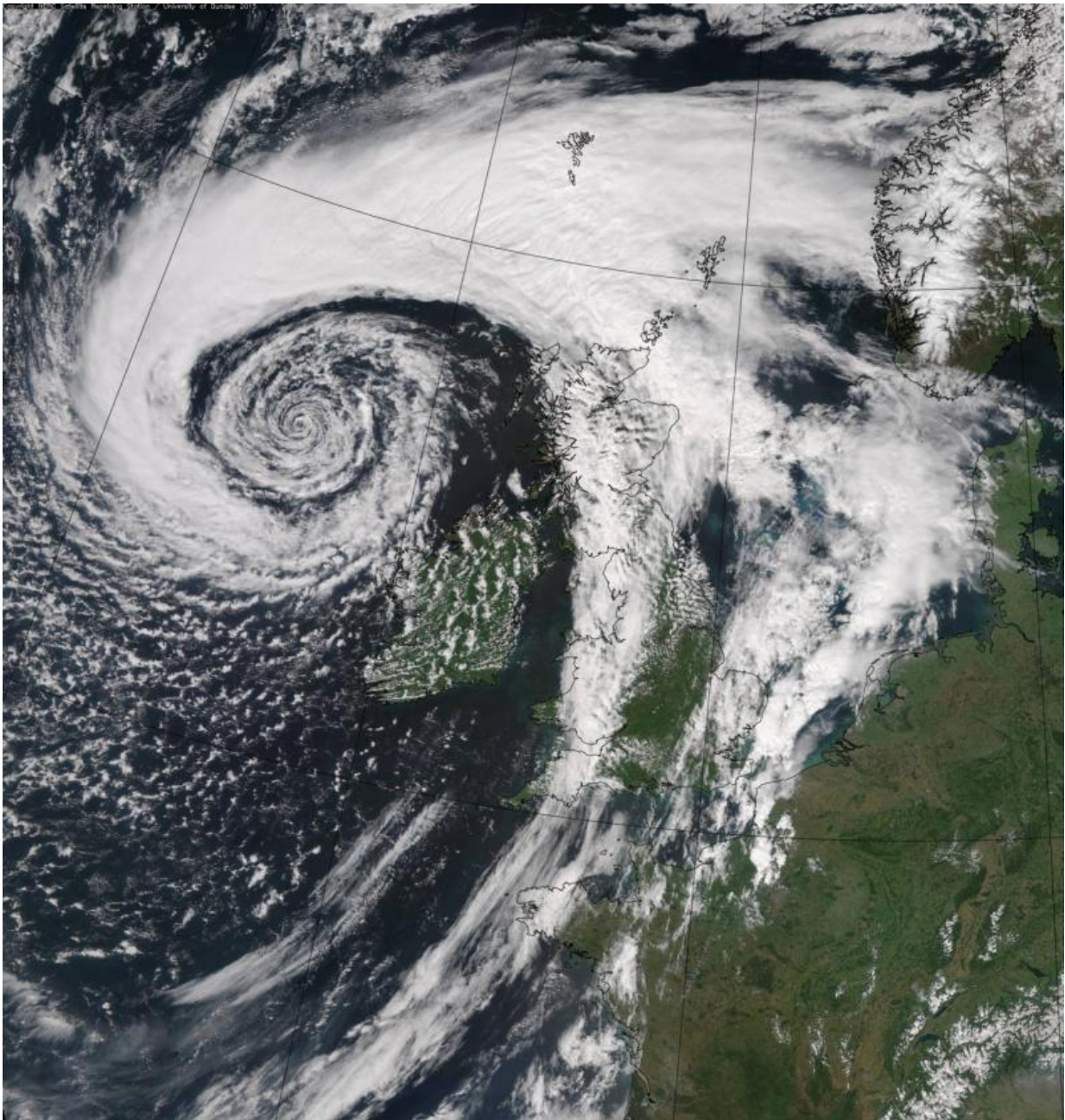


# Possible increase in the number of extremely strong fronts over Europe

February 9 2017

---



A summertime cold front, associated with a low pressure system northwest of Ireland, crossing Europe. Ahead of the front thunderstorm development can be observed. Credit: NERC Satellit Receiving Station / University of Dundee

A new study finds an increase of strong and extremely strong fronts in summertime and autumn over Europe. Whether this is a trend or caused by climate change remains to be seen, according to lead author Sebastian Schemm.

Weather fronts are key contributors to daily weather forecasts. When they traverse from west to east across Europe, they bring vigorous weather changes, often in connection with high wind speed, gusts, heavy precipitation or often hail, mostly in continental Europe during the summer season.

In a recent study in *Geophysical Research Letters*, Sebastian Schemm from the University of Bergen and collaborators revealed an increase in the number of strong and extremely strong fronts over Europe mainly during summer and autumn. The study was also selected as a research highlight in *Nature Climate Change*.

In their study, the authors investigated gridded data based on observations and satellite retrievals for the period between 1979–2014.

No comparable trend is identified over continental North America. Because frontal precipitations increase with the strength of a front, this finding may help to better understand the high spatio-temporal variability of precipitation trends across Europe.

"Surprisingly meteorologist have yet to settle on a single front definition," argues Sebastian Schemm. "But in our study, we relied on a very common method that helps meteorologist to draw surface fronts."

Information about temperature and moisture contrasts are combined into one single variable. Accordingly, the authors are able to pinpoint increasing atmospheric humidity as the underlying cause of the observed trend in extreme fronts.

According to the IPCC AR5 report, humidity trends are significant over Europe but mixed or close to zero over parts of North America. This is in agreement with the trend in weather fronts. However, according to the lead author, it remains to be seen if the increase in the number of extremely strong fronts is tied to anthropogenic [climate change](#) or simply natural variability and part of a multi-decadal climate fluctuation.

**More information:** S. Schemm et al. Increase in the number of extremely strong fronts over Europe? A study based on ERA-Interim reanalysis (1979-2014), *Geophysical Research Letters* (2017). [DOI: 10.1002/2016GL071451](#)

Provided by University of Bergen

Citation: Possible increase in the number of extremely strong fronts over Europe (2017, February 9) retrieved 15 May 2024 from <https://phys.org/news/2017-02-extremely-strong-fronts-europe.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.