



Training calendar and autumn course information

Date	Activity
25 – 29 September 2023	ESSL-EUMETSAT Testbed week 3
9 – 13 October 2023	ESSL-EUMETSAT Testbed week 4
16 – 18 October 2023	Expert Workshop on Severe Weather Warnings
7 – 9 November 2023	Course Towards better written and oral weather communication
27 November – 1 December 2023	Course Aviation Forecasting of Severe Convection (autumn edition)
15 – 19 April 2024	Course Forecasting Severe Convection (FSC 2024 spring edition)
22 – 26 April 2024	Course Aviation Forecasting of Severe Convection (2024 spring edition)
13 – 17 May 2024	ESSL-EUMETSAT Testbed 2024 – week 1
3 – 7 June 2024	ESSL-EUMETSAT Testbed 2024 – week 2 (at EUMETSAT headquarters in Darmstadt, Germany)
17 – 21 June 2024	Regular week ESSL Testbed 2024
24 – 28 June 2024	Expert week ESSL Testbed 2024
1 – 5 July 2024	ESSL-EUMETSAT Testbed 2024 – week 3
9 – 13 September 2024	ESSL-EUMETSAT Testbed 2024 – week 4
16 – 20 September 2024	ESSL-EUMETSAT Testbed 2024 – week 5
7 – 11 October 2024	ESSL-EUMETSAT Testbed 2024 – week 6
25 – 29 November 2024	Course: Aviation Forecasting of Severe Convection (2024 autumn edition)
Autumn 2025	12th European Conference on Severe Storms

ESSL Expert Workshop on Severe Weather Warnings: From Expectations via Physical Ingredients to Impact-based Warnings and Beyond

Many meetings are held with the goal to improve warnings, so why another workshop?

At ESSL, we feel that it is worth doing this. We will take a very broad multidisciplinary view, from philosophic risk ethics and legal frameworks down the line to physical ingredients, to the question of true impact based warnings and communication issues. With our background in real forecasting of high-end events and with ESSL staff being deeply rooted in forecasting and warning practice, we will provide an open and still task-oriented atmosphere for fresh thinking and fruitful discussions.

The target audience is: Forecasters (“warners”) and heads of forecasters, researchers and practitioners related to warnings, civil protection authorities, risk researchers, and end users of warnings (especially from critical infrastructure).

The workshop will be held from **16 to 18 October 2023** in our ESSL Research and Training Centre in Wiener Neustadt, Austria. [Please register soon.](#)



Photos taken by Tomáš Púčik and Alois M. Holzer

Towards better written and oral weather communication course

There is often too much to tell for not enough attention and time. Therefore, one of the key functions of communicators is to condense the available information to the most important messages that can be transported to and received by the readers, listeners and viewers.

As meteorologists or other professionals from the meteorology and climate sector we need to communicate most precisely and most concisely, sometimes also nicely and entertaining, in any

case understandable and in a usable way. This course will teach concepts for texting and oral presentation of weather reports, but also for approaches to good answers during media interviews. The course will offer conceptual models and repeated opportunities for practical training in small groups.

Target groups: Media weather presenters, forecasters at national weather services, professionals and scientists with media contacts in the fields of meteorology and climate.

The course will be held by **Alois M. Holzer**, former head of forecasting at the Austrian Broadcasting Corporation ORF, from **7 to 9 November 2023** at our ESSL Research and Training Centre in Wiener Neustadt, Austria.

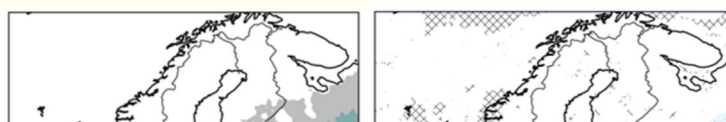


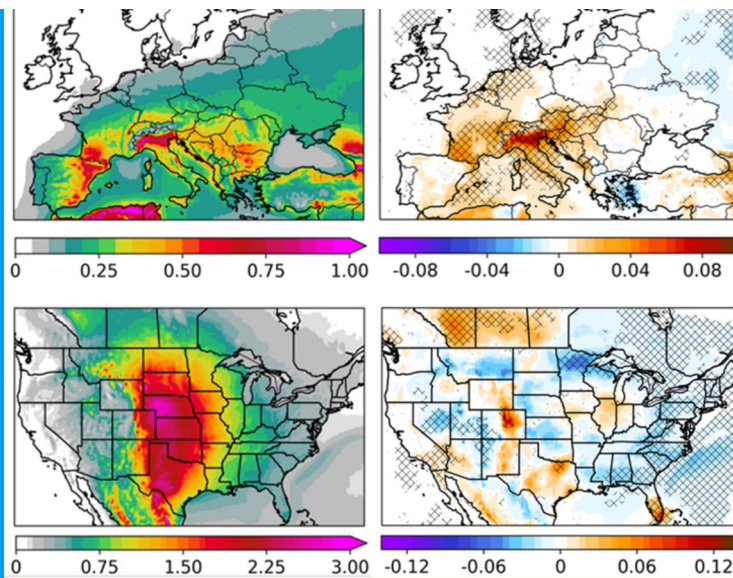
Alois M. Holzer while live broadcasting

There are still places available for the autumn edition of the aviation course: "Aviation Forecasting of Severe Convection".

Interested persons should [register](#) as soon as possible.

Study on hail climatology accepted for publication





Projected annual number of hours with hail ≥ 2 cm (left) within 40 km of a point, using the newly developed AR-CHaMo regression model in CHECC, and changes in the period 1950 – 2020, on the basis of the ERA5 reanalysis, lightning data, and training data from the European Severe Weather Database and US Storm report data. From Battaglioli et al (2023).

The first publication from the **CHECC project (Convective Hazard Evolution under Climate Change)**, lead-authored by **Francesco Battaglioli** was accepted for publication in the *Journal of Applied Meteorology and Climatology*.

CHECC is a 3-year research project, funded by the **German Ministry of Research and Education** and part of the national **ClimXtreme** research network which focuses on the analysis of extreme climatological events. Within the CHECC project, ESSL improves statistical dynamical models to detect extreme convective events from reanalysis and climate model data.

After successfully modelling the large hail environment results on the trend of large hail occurrence were obtained, both for Europe and the United States. The projections changes show that the frequency of large hail increased substantially and significantly across large parts of Europe, most strongly across Northern Italy where a doubling of hail ≥ 2 cm and a threefold increase in hail ≥ 5 cm is projected to have occurred in the period 1950 – 2020. This is mostly related to an

increase in convective available potential energy due to an increase in lower tropospheric absolute humidity.

In contrast to the widespread increases in Europe, the trends across North America are weaker and downward in some areas.

Until the article is uploaded to the website of the journal, a preprint of the article can be found [here](#).

The International Fujita scale and wind damage rating app

Since 1 September 2023, the **European Severe Weather Database** (eswd.eu) uses the **International Fujita (IF) Scale** for recording wind and tornado damage. All new wind and tornado events will, if they are rated, be enforced to use the IF-scale.

IF scale class	Instantaneous 3D wind speed	
	m/s	km/h
IF0	25	90
IF0.5	33	120
IF1	40	150
IF1.5	50	180
IF2	60	220
IF2.5	70	250
IF3	80	290
IF4	105	380
IF5	130	470

ESSL initiated the development of the IF-scale in collaboration with partners from across Europe, including meteorologists, forestry experts, and engineers.

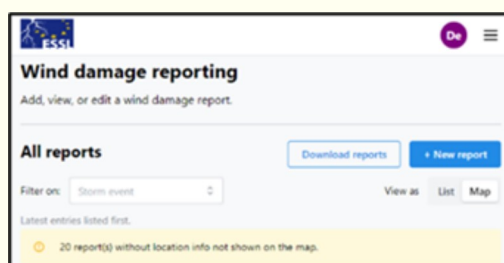
It was developed because the original Fujita scale, which was still used until recently, included damage description provided insufficient guidance for rating tornadoes in Europe.

The development of the IF-scale was catalysed by the introduction of the **Enhanced Fujita scale** in the USA in 2007. This scale drastically reduced the wind speed estimates for higher wind speeds while simultaneously raising it for the F0/F1 boundary compared to the original F-scale: a change apparently motivated by a need to correct for biases in tornado rating practices in the USA. This development spurred many national adaptations, such as those for Japan and Canada, each with minor or major national wind speed adjustments.

The IF scale instead keeps the original F-scale wind speeds but defines them clearly to refer to instantaneous three-dimensional wind speed at the height at which damage occurs, rather than the 3-second averaged horizontal wind speeds at 10 metres above ground level. The range of wind speeds from 25 (IF0) to 130 (IF5) maps the range of observed wind speeds in mobile doppler radar measurements and derived from tornado videos, which lends confidence that the speed estimates are realistic. The scale can easily be applied in different countries, as long as national building practices are translated to the building sturdiness classes that the IF-scale uses.

The IF-scale description can be found on the [ESSL website](#).

ESSL has developed ***an app that can be used in the field for rating and storing tornado and wind damage***. Important features are the ability to store georeferenced photos with text comments and to immediately assign it an IF-scale rating. It is hoped that this will facilitate the collection of more detailed information on tornado and local wind damage and thereby increase our knowledge of such events.





ESSL has given a selection of beta users access among its weather service members and volunteer and to try the app. ESSL members can request test access by sending a message to inflow@essl.org.

ESSL supports civil defense exercise

On July 5th ESSL represented by Alois Holzer, ESSL Director of Operations, supported a major civil defense exercise for the city and surrounding districts. Alois Holzer gave a lecture on tornado basics as a prelude for the management team of around 40 officials. The tornado scenario of the exercise concerned urban areas and the talk gave the participating entities insight into the impacts of violent tornadoes. Recent events as well as some major historical cases were used to present possible threats and sequence of events.



From left to right: Markus Biffel (Head of City Administration Wiener Neustadt), Alois M. Holzer (ESSL Director of Operations), Doris Hailzl (Head civil protection department and main organizer of exercise). Background: situation room for civil defense emergencies.

Hail record broken again – 19cm hailstone confirmed in Italy

On **24 July 2023** at about 11 PM in the evening, giant hail hit the town of Azzano Decimo, where the record breaking hailstone was found. After a thorough examination of the reports and photos, the specialists of the European Severe Weather Database (ESWD) came to the conclusion, that the diameter of this hailstone can be confirmed as 19 cm.

The new hailstone comes very close to the world record of a hailstone from 23 July 2010 in Vivian, South Dakota, with a diameter of 8 inches (20.3 cm).



Record breaking hailstone in Italy © Tornado in Italia – Marilena Tonin

ESSL want to thank its local partners, as **PreTemp** in Italy, and the reporters of hail to their great collaboration and contributions to the **European Severe Weather Database (ESWD)**!

Unsure which course to attend? [Try our online quiz!](#)

For further information about the registration for these events, please contact us at: events@essl.org

Or approach us for [tailored trainings or forecaster training on-the-job](#).



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