ESSL Newsletter 2026-1

January 2026

20 years of ESSL – monthly jubilee topic

As part of the celebrations of 20 years of ESSL, we are publishing a series of monthly jubilee topics highlighting different aspects of our work and community. Each month, we briefly revisit a historical high-impact event featured as the “topic of the month” in the ESSL calendar. This time, we focus on the devastating avalanche period in the Alps in January 1951 – the so-called “Winter of Terror”.

Avalanches in Austria, Italy, Liechtenstein, Switzerland

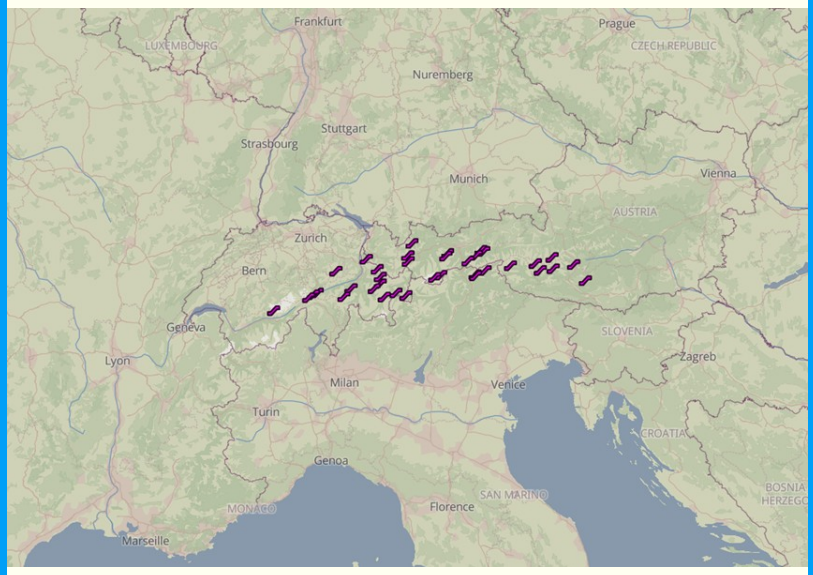
Date: 19–22 January 1951

Fatalities: 151 (based on ESWD)

This catastrophic event, known as the "**Winter of Terror**" (*Lawinenwinter 1951*), occurred between 19–22 January 1951. Beginning on January 18, precipitation fell continuously for 88 hours without interruption. New snow accumulations reached **100–250 cm** across the northern Alps, with a 3-day snowfall of 127 cm at Galtür, Austria, corresponding to a 150-year return period.

The disaster claimed at least 151 lives across the

Alps based on ESWD: *74 in Austria, 68 in Switzerland and 9 in Italy*. In Switzerland, approximately 330 avalanches caused building damage, with over 1,100 structures damaged or destroyed, including 120 residential buildings. Forest destruction was equally severe, avalanches devastating 1,440 hectares of forest and destroying 130,000 m³ of timber. In Austria, the affected area extended from Vorarlberg and Tyrol to Salzburg and Carinthia.



Locations of avalanches in Austria, Italy, Liechtenstein and Switzerland between 19 and 22 January 1951 (source: ESWD)

Register now for our new radar course!

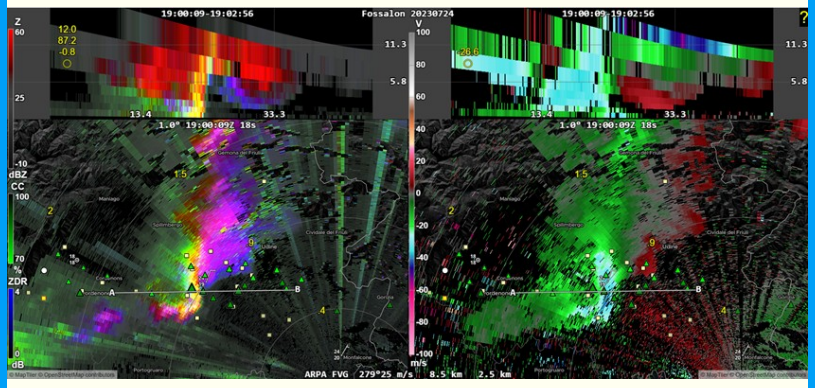
Our new course "**Optimal Use of Radar Data in Severe Storm Nowcasting**" will take place in early March 2026 (9–13 March) at the ESSL Research and Training Centre in Wiener Neustadt (Austria).

In this intensive radar meteorology course, led by **Dr. Tomáš Púčik**, **Dr. Pieter Groenemeijer**, and **Bram van 't Veen**, you will learn how to use (dual-polarimetric) radar data most effectively for nowcasting convective storms and their hazards – from understanding key radar variables and avoiding common pitfalls to interpreting the signatures of different storm types. We will practise radar data interrogation on real storm cases from different European countries, and possibly even the U.S., using our brand-new, in-

house-developed radar displayer.

More information and registration are available here.

A short video demonstrating the capabilities of the Radar Displayer can be found here.



Interview with Federico Pavan

In this issue, we feature an interview with **Federico Pavan**, a highly active member of the **PRETEMP VON team** whose work helps strengthen severe weather reporting and verification for Italy, feeding into **ESWD**. Passionate about uncovering and re-assessing Italy's tornado history—and working closely with ESSL on historical reanalysis and intensity ratings—Federico shares what drives his long-standing commitment, which began with systematic storm documentation back in 2013.

Do you remember the moment you first fell in love with meteorology—and what made you begin documenting storms systematically back in May 2013 rather than just following them casually?

There wasn't really a specific moment in which I fell in love with meteorology, it was more of a gradual process. I consider myself part of the "*Twister* generation" as that movie was the kicker for my fascination with tornadoes. Then, growing up, the entire field of meteorology became my world, probably aided by some snow events in my late elementary-middle school days. Then in May 2013 I started documenting thunderstorms because I wanted to keep some documentation of what passed by my area, especially after missing the Venice tornado of 12 June 2012 and losing who-knows-where my cellphone shots of an impressive supercell that same Summer. But the thing that really got me going was my parents gifting me a digital camera earlier in Spring 2013, so I had no reason to not do it then!

"Supercell I saw on 29 August 2025, so far my last but by far the best I've seen."

How did you first learn about ESWD and the VOP role, and what motivated you to get involved?

ESWD is something I discovered after the IF4 tornado not too far from my town on 08 July 2015, but my first true exposure to it happened when the article "*Tornadoes in Europe: An Underestimated Threat*" (Antonescu et al., 2017) was published, then I got much more familiar with it only after joining the PRETEMP project in Fall 2018. The VOP role came much later than that aside from the collaborative work we do at PRETEMP for Italy via the automated sending of reports, and was more of a consequence of me wanting to discover the

historical events of my country.

Since StormReport contributions have been forwarded to ESWD since 2019, what do you think is most critical to keep this volunteer-based reporting chain accurate and consistent?

To me the most important aspect is the collaboration with storm chasers and weather enthusiasts on the territory. Meteorology is a science and if we manage to make them part of the research via reporting what they see or what users on their social media pages/channels (they collectively reach millions of people!) see, then our goal is reached! Plus by being in areas where certain events occur, they can be contacted to get further information and even conduct surveys to confirm uncertain reports. Over the years we managed to confirm numerous tornadoes this way, but hail events benefit from these investigations as well and it's all a way to increase the quality of the reports we produce!

What draws you most to re-evaluating historical tornado cases in Italy? And is there one tornado or severe weather event you've worked on that stands out as your "favorite"—and why?

Probably the fact that tornadoes are such underestimated events here in Italy even now in 2026. By giving them a different name ("tromba d'aria"), I feel like people are downplaying them, so public awareness of the threat is close to zero. Aside from two or three historical events, people still think that "They're just an American phenomenon", when in reality they are way more common than what they imagine and that in our history big events have been striking quite frequently.

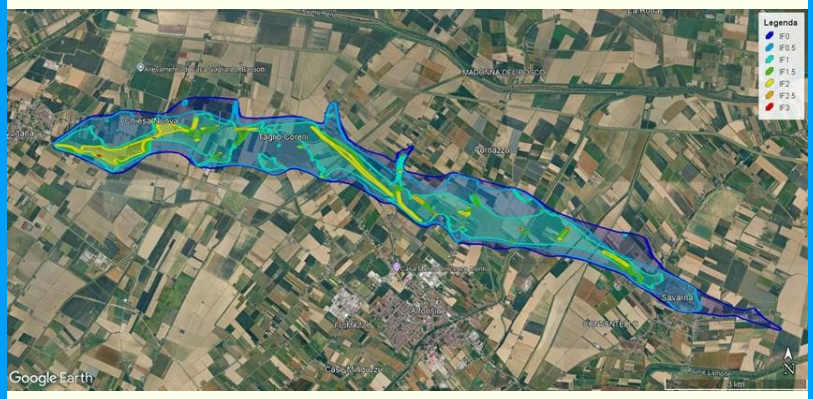
The severe weather event that stands out the most in my research is by far 04 July 1965. On that day at least three waves of extremely severe storms caused massive amounts of damage basically all over northern Italy. The event produced likely multiple instances of very large to giant hail, destructive winds, flooding and strong tornadoes.

Of the four we managed to confirm so far, by working with ESSL, turns out all of them seem to have been of at least IF3 intensity, with one as of now confirmed at F4/IF4 intensity. An event of this magnitude is unprecedented and not seen since for Italy. I wouldn't consider it "my favorite" though, as this event caused way too much damage, deaths and injuries for that.

You currently assess intensity using the IF scale—what has proven most useful about the IF approach in the European context?

The IF scale is probably the best way to assess wind damage as of now in Europe. In Italy there have been a few attempts at applying the EF scale to some tornadoes between 2010 and 2017, but those surveys and analysis were conducted with a civil engineer-weather enthusiast, our friend Davide Rosa, who had a great idea of what he was analyzing. None of us have that kind of knowledge and it's next to impossible, as of now, to conduct proper surveys here in Italy, so we often have no idea of what we're looking at on an engineering level. Our best work came with the Alfonsine tornado on 22 July 2023, which occurred just before the public release of the IF scale, so the timing could not have been better! Based on the details of the IF scale, we were able to conduct the surveys by documenting the damage indicators in the proper way, collecting the right information and so properly identifying the correct D.I. classes. For one of the indicators we asked one of the surveyors to measure the thickness of the walls of a destroyed building to help us because we were having a hard time with it, and that ended up being one of the IF3-rated indicators. So to me being a sort of "middle ground" between a more general scale (Fujita) and a more advanced scale (Enhanced Fujita) is the strength of the IF scale in a country and a continent where the combination of engineering analyses and weather has not reached yet its full potential like in American and Asian countries with the EF scale. Still, we do ask engineer Rosa for his opinion as he's much more experienced than us, but if the photos are properly taken even us can have a general idea on how to

rate damage!



"The map of the Alfonsine tornado of 22 July 2023, the best reconstruction we did so far with the entire PRETEMP team"

How do you think your work with the severe weather reports contributes to science and society?

Our work in collecting the reports is likely helping on multiple levels. First of all, we're finally managing to cover the hard-to-work-with country of Italy, which frequently experiences very severe storms (July 2023 was a great example), so properly recording them via the various databases (StormReport and ESWD) is of great importance. And then the collection of reports goes directly into studies on statistical occurrences on a national and international level and on how these events occur and could be changing due to climate change. But even on a societal level this is a great thing to do! It's a way to educate people on the threats they can experience and remind them of what occurred in the past. Way too often people forget big events way too fast. And finally, it can be helpful in a more direct way! In some cases our data on single events helped people in getting "refunded" for the damage they suffered.

What would you recommend to someone who wants to become a VOP—what core skills should they build first, and how can they practice on real cases?

My biggest recommendation is to build a network: contact people active in the field, collaborate with them, involve them in the research you're conducting! Collaboration and mutual sharing of information is our greatest strength, especially

because each of us has some personal knowledge that can be extremely helpful in certain situations, like knowing the territory or local acquaintances to contact to further investigate. And always be polite and open to everyone, people outside our weather-world will collaborate if you do that! We managed to get help from local citizens and even Italy's Civil Protection volunteers and regional ARPA agencies to help us with hailstorms and tornadoes! Practice on real cases is harder to approach and it all comes down to building experience: where to look for, how to do it, finding reliable sources and avoiding unreliable ones… By reporting more and more you will recognize the sources you can trust!

ESSL training calendar and Testbed 2026

You can find details about all events and registration at

https://www.events.essl.org/

Date	Activity
2 – 6 February 2026	Course with closed audience: Aviation nowcasting of severe convection – focus on new satellite products (MTG)
9 – 13 March 2026	NEW Course: Optimal use of radar data in severe storm nowcasting
23 – 27 March 2026	Course: Forecasting Severe Convection (FSC1)
13 – 17 April 2026	Course: Aviation Forecasting of Severe Convection
4 – 8 May and 18 – 22 May 2026	ESSL-EUMETSAT Forecaster Testbed weeks (t.b.c.) – tentative dates
11 – 12 May and 1 – 2 June 2026	NEW 2-day ONLINE refresher on forecasting severe convection (qualification: at least one prior ESSL course or testbed week)
15 – 19 June 2026	ESSL Testbed 2025 – regular week (focus on radar and NWP)
22 – 26 June 2026	ESSL Testbed 2025 – expert week
7 – 11 September 2026	EMS Annual Meeting (co-sponsored by ESSL)
14 – 18 September and 5 – 9 October 2026	ESSL-EUMETSAT Forecaster Testbed weeks (t.b.c.) – tentative dates
13 – 15 October 2026	IF Scale and wind damage assessment workshop (tentative)
10 – 12 November 2026	Second ESSL Workshop on Weather Warnings (tentative)

Unsure which course to attend? Try our online quiz!

For further information about registration, please contact us via email: events@essl.org .

Or approach us for tailored trainings or forecaster

training on-the-job.

ESSL
European Severe Storms Laboratory