ESSL Newsletter 2021-2

March 2021

ESSL invites participants to register for the ESSL Testbed 2021

Testbed participation includes lectures on ingredient-based storm forecasting, that will be applied during afternoon forecasting sessions. In addition, participants work with new, developmental tools to support forecasting convective hazards, and provide feedback to them. This year, the Testbed will feature several new nowcasting tools from **DWD**, convection-permitting ensemble forecasts from **ZAMG** and **DWD** and the CAPE and CAPESHEAR Extreme Forecast Index of **ECMWF**.

The first Testbed week is from **14 – 18 June** and the last one is from **12 – 16 July**, both will take part *online*.

For experts in storm forecasting, two Testbed Expert weeks are organized online from **21 −21**

June and **5 –9 July**. During those weeks, the basics of ingredients-based forecasting will be skipped, and participants are asked to present a case study or advanced topic for discussion among colleagues. There will also be a stronger focus on the collection of feedback to the tools and products.

ESSL training calendar and Testbed 2021

Date(s)	Event (click on the respective link for more information)	
19 – 23 April 2021	**Forecasting of Severe Convection** online course exclusively for Regione Marche – Servizio Protezione Civile (Italy)	
3 – 7 May 2021	**Forecasting of Severe Convection I** by ESSL staff (Dr. Tomas Pucik, Dr. Christoph Gatzen) *This course week is fully booked.*	Online
14 – 18 June, 21-25 June, 5 – 9 July, 12 – 16 July	**ESSL Testbed 2021** in Wiener Neustadt, Austria or online, if needed	Online or on-site, see the description page.
6 – 10 Sep 2021	**EMS Annual Meeting: European Conference for Applied Meteorology and Climatology** co-sponsored by ESSL, in Barcelona, Spain	
4 – 8 October 2021	**Aviation Forecasting of Severe Convection** by Dr. Tomáš Púčik	
2022	**ECSS2021 – 11th European Conference on Severe Storms** in Bucharest, Romania	Will be rescheduled in 2022

Project "Convective Hazard Evolution under Climate Change (CHECC)"

ESSL researcher **Francesco Battaglioli** is working within the project "Convective Hazard Evolution

under Climate Change (CHECC)" and there are some first results. As part of the project, additive regression models for convective hazards such as large hail are being developed in order to study trends in reanalysis and climate models.

A hail model based on ERA5 reanalysis has shown to accurately reproduce the spatial distribution, the seasonal and the diurnal cycle of hail observations in the ESWD. The figure below shows that the model is able to portrait much smaller features than was possible with the coarser ERA-Interim reanalysis.

In addition, although the model has been trained across a limited domain in Central Europe, there are good indications that it works well across other regions such as the United States.

Distribution of hail probabilities across a portion of southern Europe (1979-2019)
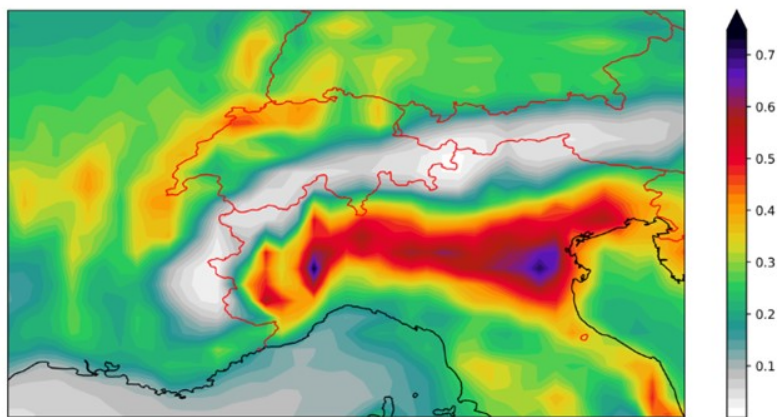
Kick off of project on new sensor system for lightning warnings

ESSL is happy to have started a collaboration with the Department of integrated Sensor Systems of

the The Danube University Krems, where ESSL will assist in the evaluation of a new type of sensor system for local lightning warnings. Testing of the system is planned to take place at ESSL during the summer Testbeds of 2022 and 2023. The project kick-off meeting took place on 8 March 2021.