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ESSL to launch a Smartphone App supporting ESWD

In a September meeting of ESWD stakeholders on reporting thresholds, the development of a smartphone application was conceived to solve the balancing act between different needs from nowcast and climatology users.

ESSL stakeholder met at the Research and Training Centre in Wiener Neustadt, Austria, in September 2013, to discuss the ESWD and its diverse uses, e.g. nowcasting, forecast verification, algorithm testing and climatological studies.



It was found that some severe weather events are of interest to all users, whereas others are of interest to some only. For example, freezing drizzle is probably always of interest to a nowcast meteorologist, but without observed large impacts most felt hard-pressed to call it severe weather in terms of the European Severe Weather Database.

The meeting participants therefore discussed if two different levels of thresholds would be needed. The upper threshold would be a strict criterion that qualifies a report for inclusion into the database, of interest especially for users wanting to analyse events with a (potential) high impact, e.g. in climatological studies. ESSL would need to (continue to) actively collect these reports and perform thorough quality control.

The lower threshold would be less strict and would qualify a report for inclusion in the database because of its relevance to nowcasting operations. It was then concluded that the best way to move forward is to include such 'less severe, but interesting' reports into a database parallel to the ESWD. Not being bound by strict, and admittedly complicated thresholds, the general public would be able to contribute even more easily to such a dataset: by using a smartphone app.

ESSL is currently developing this app, which anyone will be able to install free of cost, and use to report the local weather situation. The app-reports are collected into a second database parallel to ESWD. The difference with ESWD is that no quality control will take place. However, any report meeting the severity thresholds of the ESWD can be forwarded into the ESWD as a quality-controlled report.

The idea of this application is strongly based on the successful app 'mPING', which Greg Stumpf (NOAA/OU) introduced to ESSL during the 2013 Testbed. Typically, large numbers of relatively benign weather conditions are reported in mPING, such as rain or snowfall, but occasionally reports include severe weather conditions.

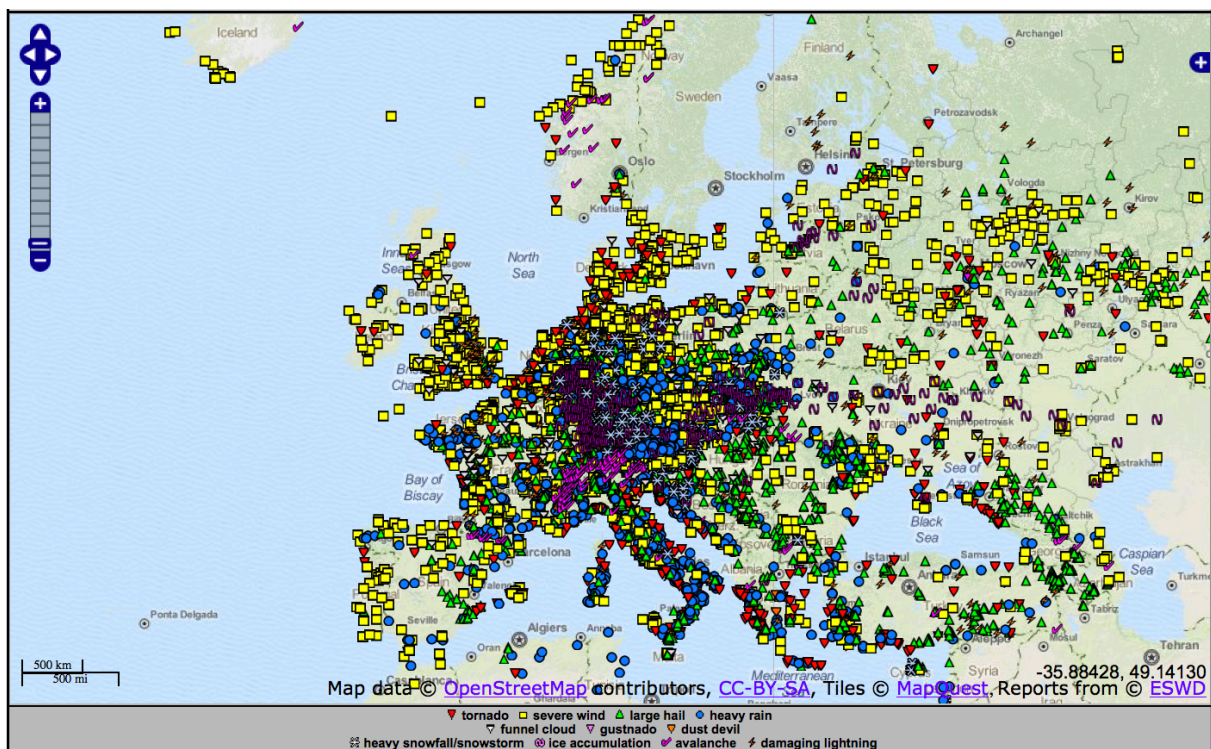
With the app, ESSL expects to both substantially strengthen the ESWD, and be able to better serve the needs of the nowcast users at the National Hydro-Meteorological Services.

ESWD developments and summary 2013

In 2013, a new record was established: 9 951 severe weather events were added to the ESWD. In comparison, 9 019 events were reported in 2012. More than 85 % of the 2013 reports have quality status QC1 and above and are summarised in the following table.

Number of reports 2013	Quality control applied to report
187	QC0, as received
1360	QC0+, plausibility checked
7989	QC1, report confirmed by reliable sources
415	QC2, event fully verified

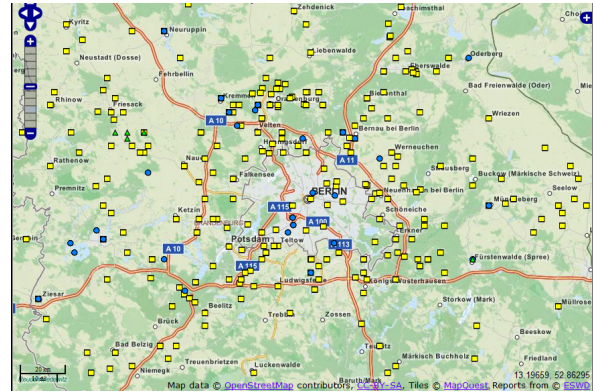
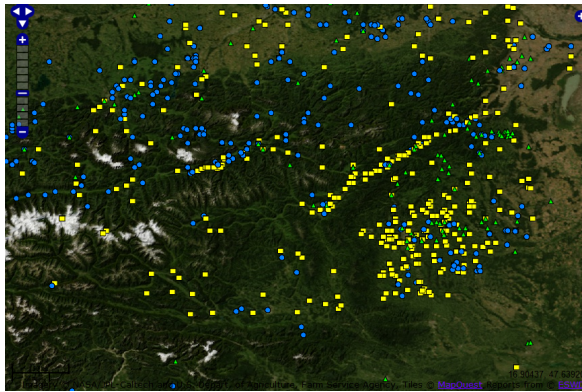
The number of ESWD reports for the year 2013 per quality control category



All ESWD reports from 1 January to 31 December 2013. Symbols of severe weather events overlap each other in some areas.

Recently, through the programming efforts of Zhongjian Liang, a new feature was added to ESWD. It is now possible to select an interactive map, that has a zoom function and an option to click on individual reports to see more detailed information. The static map is, and will continue to, be available as well.

The new features allow for better and more individual data displays and are based on our user requests. The following two pictures serve as an example focusing on the eastern Alps and the metropolitan area of Berlin.



All ESWD reports from 1 January to 31 December 2013 focusing on the eastern Alps (left) and the metropolitan area of Berlin (right).

ESSL position on the Enhanced Fujita (EF) scale

In a meeting at the Research and Training Centre in Wiener Neustadt, ESSL and invited guests discussed the assessment of wind speeds from wind damage, taking note of the implementation of the ‘Enhanced’ Fujita scale in the United States and some other countries.

A position paper was formulated and thereafter sent to the stakeholders group of the EF scale in the USA, where it is planned to found an EF Scale Oversight Committee shortly. The ESSL position paper can be found on the ESSL website.

The meeting resulted in the following position statement regarding the EF-scale:

ESSL finds that the current EF-scale has a number of important positive changes compared to the F-scale, such as the use of multiple damage indicators, the use of the concept of “degrees of damage” and the development of a somewhat objective application of the scale for use by less experienced damage assessment teams.

We note that the EF-scale in its present form is essentially a damage scale, which still has a number of problems. These are:

- 1) The underlying wind speed to damage relation is still poorly known. The relation between damage and wind speed needs to be substantiated by research.
- 2) The EF-scale does not cover the observed range of wind speeds. The downward adjustment of wind speeds (compared to the F-scale) in the upper range of the scale is not justified by recent documentation of actual wind speeds in tornadoes.
- 3) The wind speeds currently assigned to the EF-scale are not compatible with the original F-scale, which is a problem in climatological studies.
- 4) The current EF-Scale damage assessment needs additional damage indicators, in particular including more vegetation damage and including structures not represented by examples of US construction practices. The existing list is inadequate.

Because of these problems, ESSL cannot implement the EF-scale in its current form. ESSL wants to contribute to the scale improvement anticipated with the development of an EF oversight process. The goal should be to establish a scale that is i) broadly applicable, ii) accurate and iii) consistent. To reach this the committee should include international stakeholders like the ESSL.

ESSL resumes CWG secretariat for the next three years

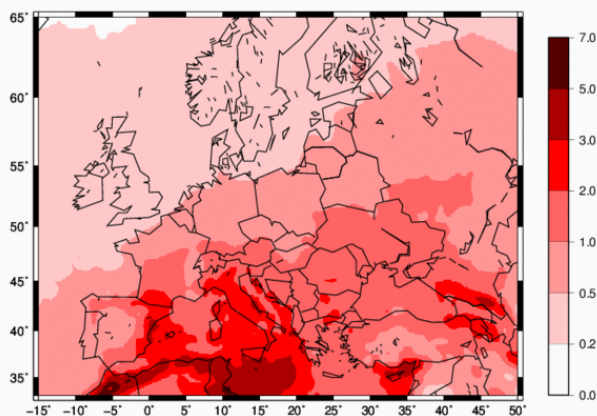
The Convection Working Group (CWG) is an initiative of EUMETSAT and its member states, and the ESSL (see ESSL newsletter 2013-1 for more information).



ESSL was mandated to set the secretariat of the CWG. Following an offer by ESSL, recently EUMETSAT decided that ESSL is going to fill the position of the secretariat for three further years. As an upcoming activity of the CWG, a multi-day workshop will be held in Zagreb in March 2014.

Project STEPCLIM - Severe Thunderstorm Predictability in Climate Models

avg. modeled number of large HAIL events (>2 cm) per 0.75 x 0.75 deg box per year: 1990ies



ESSL employees Georg Pistotnik, Thilo Kühne and Pieter Groenemeijer continue to work on developing a method to evaluate the frequency of convective severe weather from coarse numerical models.

Based on the fundamental physical ingredients required for the development, such as CAPE and wind shear, *proxy* variables have been developed (and continue to be improved). When applying these to reanalysis data, the spatial distribution of

such events, like large hail, tornadoes or severe wind gusts, can be developed. As a preliminary result, the illustration shows the modelled frequency of large hail in the 1990s. The team will soon submit its work for publication in a peer-reviewed journal.

STEPCLIM is part of the MiKlip (decadal climate predictions) programme, funded by the German Ministry of Education and Research.



ECSS 2015

8th European Conference on Severe Storms

Preparations have started for the upcoming European Conference on Severe Storms (ECSS), 14 - 18 Sept. 2015 in Wiener Neustadt, Austria. Our venue, a baroque style ballroom, is currently undergoing intense renovation works and will be soon glistening in its renewed splendour. At ESSL, we are currently about to start setting up the Scientific Programme Committee, drafting the outline programme and entering into contractual agreements with the venue, caterers, and touristic providers. We are also happy to announce that we have made an agreement with professional conference organizer Copernicus, who will take care of registration and abstract management.

A change regarding registration will be the introduction of a modest abstract registration fee for every submission, following the example of many other conferences. This is necessary to make sure that the poster walls, which are expensive to rent, will be used more effectively. This income and the saved costs on excess poster walls will flow back to the scientific conference budget and will allow ESSL to better support truly interested people with a weak financial background.



Baroque-style ballroom in Wiener Neustadt - the venue of the ECSS 2015

The preparations for every ECSS naturally involve talks with potential sponsors. We encourage you to contact us if you know a good sponsor candidate or a potentially interested exhibitor of meteorological supplies. Of course, in case your organization or company is itself potentially interested in sponsoring the ECSS, please do not hesitate to get in touch.

Testbed 2014 early registration ending soon

The preparations of the next Testbed are in full swing. An early registration is possible until **20 February 2014**. The registration form can be found on our website. Join these years' Testbed in either June or October (tentatively) and help improving forecasting tools and expand your experiences in forecasting severe weather.



Tornado and Windstorm Damage Assessment workshop in September 2014

ESSL offers a 5 day workshop on tornado and windstorm damage assessment by Alois M. Holzer, Dr. Bernold Feuerstein, Dr. Charles A. Doswell III, Georg Pistotnik, Dr. Pieter Groenemeijer and expert guests at the Research at Training Centre in Wiener Neustadt, Austria, starting 1 September 2014. The workshop is focused on a special field of "Forensic Meteorology" to determine the type of a past damage event (windstorm or tornado) and to estimate the strength of the maximum wind. The topics cover:

- Importance of damage assessment for severe storm climatology (with emphasis on ESWD)
- Methods of damage survey and application of wind damage scales
- Selected case studies and/or a current field study, if a recent case is within reach
- Expert discussion on damage assessment methods and their future development

Early registration is possible until 1 March 2014. Same holds for the seminar “Forecasting Severe Convection I (Basic Course)”. The registration form can be found on our website.

EMS/ECAC and ESSL GA in Prague 2014

The 14th European Meteorological Society (EMS) Annual Meeting and the 10th European Conference on Applied Climatology (ECAC) will take place in Prague, Czech Republic, from 6 to 10 October 2014. The EMS/ECAC meeting will host the next ESSL General Assembly. We invite you to participate, not only in our General Assembly, but also in the EMS/ECAC! You can find a link to the conference webpage on our “Upcoming Activities” internet page. We will inform our members about the exact date and time of our General Assembly as soon as possible.

ESSL Supporter

Do you feel close to the ideas and goals of ESSL, but a formal membership is not the suitable form for you? Become an ESSL Supporter.

ESSL created a new form of support during the EB-meeting in Bremerhaven in January 2014. The ESSL supporter fills the niche between a donator, which does not receive the ESSL newsletter and other forms of information, and a supporting member, who has access to the ESWD among other benefits. You can become an ESSL Supporter by donating EUR 100 per year. We will keep you informed about our activities via newsletters and you will be on our list for email-updates, conference releases and other messages. You can terminate your support without notice and anytime you like. If you wish, we will put you on a honourable list of “ESSL Supporters” on the ESSL website. The ESSL Supporter application form is available on the ESSL website.

Wessling, 17 February 2014

Pieter Groenemeijer, Director
Kathrin Riemann-Campe, Deputy Director
Alois M. Holzer, Treasurer – Director of Operations