



**ESSL**  
c/o DLR-IPA  
Münchener Str. 20  
82234 Wessling  
Germany

Phone: (+49) 151 59031839  
Fax: (+49) 8153 96599911  
E-mail: eb@essl.org  
Internet: www.essl.org

## European Severe Storms Laboratory e. V. (ESSL) Newsletter 2011-2

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### Review of the 6th European Conference on Severe Storms, ECSS 2011

The 6<sup>th</sup> European Conference on Severe Storms was organized by the European Severe Storms Laboratory (ESSL) and the University of the Balearic Islands in Palma de Mallorca, from 3 to 7 October 2011. The conference attracted no less than 223 researchers (a new record) from 34 countries, among them an impressive number of leading scientists in the field.



In almost 100 talks and about 150 poster presentations, current scientific questions surrounding severe local storm phenomena were discussed within the conference room, that was in fact a former storage basin for sweet water and now part of the museum of modern and contemporary arts, Es Baluard, in downtown Palma. At the conference, a few countries were especially well-represented: more than 10 participants each came from Spain (34), USA (28), Germany (23), Czech Republic (16), Italy (16) and Austria (13). The fact that there were contributions from all continents except Antarctica, demonstrates the global interest in severe storms.

The conference programme was comprised of 11 sessions focusing on various aspects of severe storms, including microphysics and electrification, numerical modelling, forecasting & nowcasting, convective initiation and remote sensing. The field of climatology was represented by the sessions on storm data and damage assessment, and on storm climate. In addition, there was a session on the impacts of storms on society. Two sessions were devoted to floods and flash floods and to extratropical, Mediterranean and tropical cyclones. One of the “hot topics” of the conference came from overseas: the field campaign VORTEX2 in the USA in 2009/10 investigating the origin of rotation in tornadoes and their near-surface winds by a manifold of measurement devices.

Vice versa, remote sensing – in particular multi-wavelength satellite imagery with high spatial and temporal resolution – is a field where European transnational research plays a leading role internationally. Storm features, some of them representing storm severity, can be observed and analysed in real time, providing a complementary nowcast tool to radar and ground-based observations. Last but not least, the European Severe Weather Database with more than 40,000 entries has become an established dataset with various applications in climatology, verification and case studies.

For the first time, the ESSL presented a Nikolai Dotzek Award in honour of its former director, for an outstanding contribution to the science of severe storms. At the ECSS 2011, it was presented to Paul Markowski, who received the award for his outstanding work towards finding out why some supercell storms produce tornadoes and others do not. The Award is endowed with a prize of € 1000,



*1<sup>st</sup> Dotzek awardee  
Paul Markowski*

offers free participation to the next ECSS and includes a trophy in form of an artificial large spiked hailstone.

The Heino Tooming Award 2011 was presented to Mária Putsay, Martin Setvák, André Simon and Jochen Kerkmann for their presentation “Simultaneous BTM (WV6.2-IR10.8) anomaly and above-anvil ice-plume observed above the storm of 06 July 2010, North Italy”. The Tooming Award established in 2007 by ESSL and endowed with a prize of € 300 recognizes any outstanding scientific presentation at an ECSS conference by a group led by a European scientist and involving collaborators from at least one other European country.

Two Young Scientist Travel Awards were presented by the European Meteorological Society (EMS). These awards, endowed with € 500, were awarded to Oliver Schlenczek for his work “Identification of convective modes and tracking of storm systems based on radar data”, and to Abdullah Kahraman for his work “Severe hail climatology of Turkey”. In addition, ESSL granted 10 participants travel supports by Munich Re funding.

The 7<sup>th</sup> European Conference on Severe Storms will be held in Helsinki (Finland) 3 to 7 June 2013. The conference will be organized jointly by the Finnish Meteorological Institute and the ESSL.



Participants of the 6<sup>th</sup> ECSS 2011 in Palma, Mallorca.

## ESSL General Assembly 2011

This year's General Assembly of the ESSL was held during the 6<sup>th</sup> ECSS in Palma on 7 October 2011. 20 full members were present and 6 full members were represented.

Birgit Büsing as well as her sons Armin and Gregor Dotzek became honorary members at the beginning of 2011 and received the respective deeds in a short ceremony. Birgit Büsing thanks the EB of the ESSL for their great work after the death of Nikolai and she is very proud that Nikolai's dream continues.

The place and time of the next ESSL General Assembly was discussed. It could be a side meeting of 12<sup>th</sup> EMS Annual Meeting, 10 to 14 September 2012, Łódź, Poland or of the EUMETSAT Conference in Sopot, 3 to 7 September 2012 (Poland). The final decision will be made by the EB at a later stage.


Details of the General Assembly can be found in the minutes that will be sent to all ESSL members shortly.

## New Deputy Director

Bernold Feuerstein decided to lay down his Deputy Director position at the ESSL since it became increasingly difficult for him to combine his full-time job with his duties within the Executive Board. He will continue as an assessor to the board supporting the ESSL wherever he can. The Executive Board acknowledges his work as a deputy director, particularly his contributions to the ESSL as the managing director in 2010 after Nikolai Dotzek's death.

The procedure of selecting the new Deputy Director involved putting out a vacancy. Finally, the Advisory Council proposed Dr. Kathrin Riemann-Campe for election.

The General Assembly elected Kathrin Riemann-Campe as a new Deputy Director.

	<h3>Deputy Director Dr. Kathrin Riemann-Campe</h3>
<p>studied Meteorology in Hamburg. During an exchange semester she worked with Harold Brooks at the University of Oklahoma. She obtained her PhD at the University of Hamburg for her work at the Max Plack Institute for Meteorology. Currently, she has a Postdoc position at the Sea-Ice Physics Department of the Alfred Wegener Institute, Bremerhaven</p>	

## Changes to membership fees

The General Assembly accepted the new membership fee scheme, starting 1<sup>st</sup> January 2012:

### INSTITUTIONAL FULL MEMBERS

*current fee: 750 Euro for all*

**Formula:** **fee = S x N / 70 in Euro**

rounded upward to the next multiple of 100 Euro

S is size category (see below)

N is nominal GDP per capita of the country in Euro

(source: Eurostat, and if not available: World Bank)

### Size categories:

No. of employees less than...	size category
200	1
500	2
1000	3
1500	4
2000	5
	6

### Example values:

		N = nominal GDP per capita in Euro				
S	5000	10000	20000	30000	40000	
1	100	200	300	500	600	
2	200	300	600	900	1200	
3	300	500	900	1300	1800	
4	300	600	1200	1800	2300	
5	400	800	1500	2200	2900	
6	500	900	1800	2600	3500	

### INSTITUTIONAL SUPPORTING MEMBERS

No. of employees less than...	new fee	current fee
11	800	750
101	2700	2500
1001	5500	5000
	6500	5000

## ESSL Advisory Council (AC)



At the AC meeting on 20 September 2011, Hans-Joachim Koppert is elected unanimously as vice chair of the Advisory Council. Terms of office for two members of the Advisory Council end on 31 December 2011, in both cases their first terms: Prof. Robert Sausen and Dr. Michael Staudinger. Both expressed their readiness to candidate for a second term of office and were re-elected by the General Assembly.

## ESSL Testbed and activities in Austria

The ESSL Testbed is a project to study severe weather across Europe through experimental forecast operations. It aims to test new products to support the forecasting process, while providing training and interaction between forecasters and developers.



*Future ESSL Training Centre in Wiener Neustadt*

The Executive Board planned to establish a subsidiary association of ESSL in Austria, to make it possible to carry out the ESSL Testbed. The General Assembly was asked to mandate the Executive Board to establish an ESSL subsidiary for training and Testbed activities in Austria, under the strict condition of positive financial planning for this area of business. This was approved by the General Assembly.

As a first step, the ESSL subsidiary 'European Severe Storms Laboratory – Science and Training' was founded on 7 November 2011 in Wiener Neustadt (Austria). The official registration by the local authorities was received on 10 November 2011 – the subsidiary is now ready for legal tasks.

The final decision whether the Testbed will be organized in 2012 will be made in late January based on a realistic financial planning, based on the number of registered participants and partners, and on the advice of the Advisory Council. The ESSL Testbed is foreseen to take place in the new ESSL Training Centre in Wiener Neustadt, Austria – close to Vienna Airport.

More information about the Testbed project can be found here: [www.essl.org/testbed](http://www.essl.org/testbed)

## ESWD Development

The new ESWD version with additional event types AVALANCHE, LIGHTNING, ICE and SNOW is now in the final pre-operational test phase. All QC levels are now completely included (QC0, QC0+, QC1, QC2) and the data description has been improved. The new version is planned to become operational in early 2012

## ESSL Scientific Projects

Recently, ESSL has started two new third-party funded research projects:

### MiKlip/STEPCLIM

On 1 November 2011, ESSL started the project *Severe Thunderstorm Evaluation and Predictability in Climate Models* (STEPCLIM) which is part of the research programme MiKlip (medium-range climate prediction) funded by the German Federal Ministry of Education and Research.

The German research programme MiKlip develops an ensemble prediction system for decadal climate forecasts. STEPCLIM's primary objective is to develop a suite of physical metrics to assess the frequency and intensity of severe thunderstorm hazards from climate model data. These metrics will be developed using the MiKlip prediction system, reanalysis data, and quality-controlled in-situ severe storm reports from ESSL's European Severe Weather Database. The metrics will be applied to the MiKlip forecasts to assess the feasibility of decadal forecasts of severe thunderstorm hazards. The STEPCLIM tasks are shared among Pieter Groenemeijer, who leads the project, a PhD student, and the quality-control manager of the European Severe Weather Database. The project also involves cooperation with other projects within MiKlip.

For the project period of 4 years (until 31 October 2015) the overall funding of STEPCLIM is € 400k. This is a major step forward for ESSL.

## **EUMETSAT project**

### **'Satellite Based Climatology of (Sub-)Tropical Cyclones in Europe'**

On November 18<sup>th</sup>, ESSL has started this small project requested by EUMETSAT.

In the Mediterranean Sea, and Black Sea, and in the Atlantic Ocean west of the Iberian Peninsula, storms that reveal a high level organization similar to subtropical or tropical cyclones can be observed on satellite imagery. These storms reach tropical storm strength and pose a threat to shipping, tourist industry and the coastal communities. Their frequency and intensity may change within a changing global climate.

Presently, a sound objective baseline climatology of such systems, or even methods to obtain such a climatology, are lacking - even though this would have direct applications in risk management, that would benefit, for example, shipping companies and coastal communities. To develop such a climatology, objective algorithms using satellite data can be used, in combination with numerical model data (e.g. reanalysis datasets). Moreover, such algorithms will have a potential for application in operational forecasting practice.

This pilot project will set a basis for future applications of satellite data to this problem, more precisely to facilitate automatic satellite recognition of subtropical type Mediterranean cyclones. This will be done by assessing their

- i) climatological frequency,
- ii) geographical distribution, and
- iii) typical characteristics in IR, VIS and WV channels

In preparation for possible future automatic detection algorithms, statistics of typical IR features will be derived.

The project is funded with € 25k. It will end on 1 March 2012.

Aurora Bell  
(Deputy Director)

Bernold Feuerstein  
(Deputy Director)

Pieter Groenemeijer  
(Director)