ANNUAL REPORT 2010

European Severe Storms Laboratory e. V.

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Wessling, 31 August 2011

Contents

The European Severe Storms Laboratory - ESSL

Severe thunderstorms inflict a total damage of 5 to 8 billion Euro's all over Europe each year. Even without any climate change impact, this annual amount of damage is far too high to be neglected. The European Severe Storms Laboratory, ESSL, tackles this problem by:

- Fundamental and applied research on severe convective storms in Europe;
- Operation of the European Severe Weather Database, ESWD;
- Organisation of the European Conferences on Severe Storms, ECSS.

The European Severe Storms Laboratory e. V. was founded as a private, non-profit research organisation in December 2006. It is a spin-off of German Aerospace Center DLR in Oberpfaffenhofen, and relies on the long-term expertise of its international team. Presently, the ESSL office is located at DLR-*Institut für Physik der Atmosphäre*.

1 Introduction

2010 was a year of change for the ESSL. A change that had a major impact was the sudden loss of ESSL's Director, Dr. Nikolai Dotzek, who suddenly died after a cardiac arrest. He was the very person who brought the ESSL into existence. His work in founding and leading the ESSL will never be forgotten.

This unexpected loss presented a major challenge for the remainder of the Executive Board. Being a small organization with very limited funding, a thinkable option was to dissolve the association, an option seriously discussed among the remaining Board, that was chaired by managing Director, Dr. Bernold Feuerstein.

However, it became clear that a strong willingness to continue the ESSL's efforts was present. Alois Holzer and Bernold Feuerstein indicated they would continue to perform their tasks as Treasurer and deputy Director, respectively, and I, Pieter Groenemeijer, was willing to become Director.

To further strengthen the Board - not only to compensate for the loss of Dr. Dotzek, but also in order to spread tasks among more people and among more European countries - Dr. Aurora Bell of the Romanian National Meteorological Administration and Dr. Víctor Homar of the University of the Balearic Islands joined the Executive Board. They were elected deputy Directors by the General Assembly to take office in January 2011.

With the prospect of a strong Executive Board it was clear that sufficient momentum was present to continue to pursue the Association's mission.

On a scientific level, 2010 brought the conclusion of the project RegioExakt by the end of May 2010, the conclusion of a validation study on convective initiation nowcasting for EUMETSAT and on-going work within the EU-FP7 project EWENT to which ESSL's contribution was enlarged. A new project was started with the U.K. Met Office.

Moreover, preparations for the 6th European Conference on Severe Storms were made in cooperation with Local Organizers at the University of the Balearic Islands. Technical improvements were made regarding the European Severe Weather Database.

Eight new members joined ESSL in 2010, including weather services from Austria and Romania and two institutional supporting members.

The details can be found in the various chapters of this Annual Report, that reviews ESSL's achievements in its fourth full business year.

Pieter Groenemeijer
ESSL Director

2 Science and research

2.1 The European Severe Weather Database

One major building block of ESSL's scientific activities is the application of its European Severe Weather Database (ESWD) to climatological studies of severe thunderstorms in Europe. Other applications of the ESWD lie in the verification of forecast and nowcast products, or warnings which are carried out in collaboration with parties such as the national weather services or research organisations. Verification studies of this kind, also in cooperation with the German weather service DWD have been described by Dotzek et al. (2009).

In 2010, ESSL has continued its efforts to improve and enlarge the ESWD. Regarding the enlargement is illustrated by Figure 2.1.

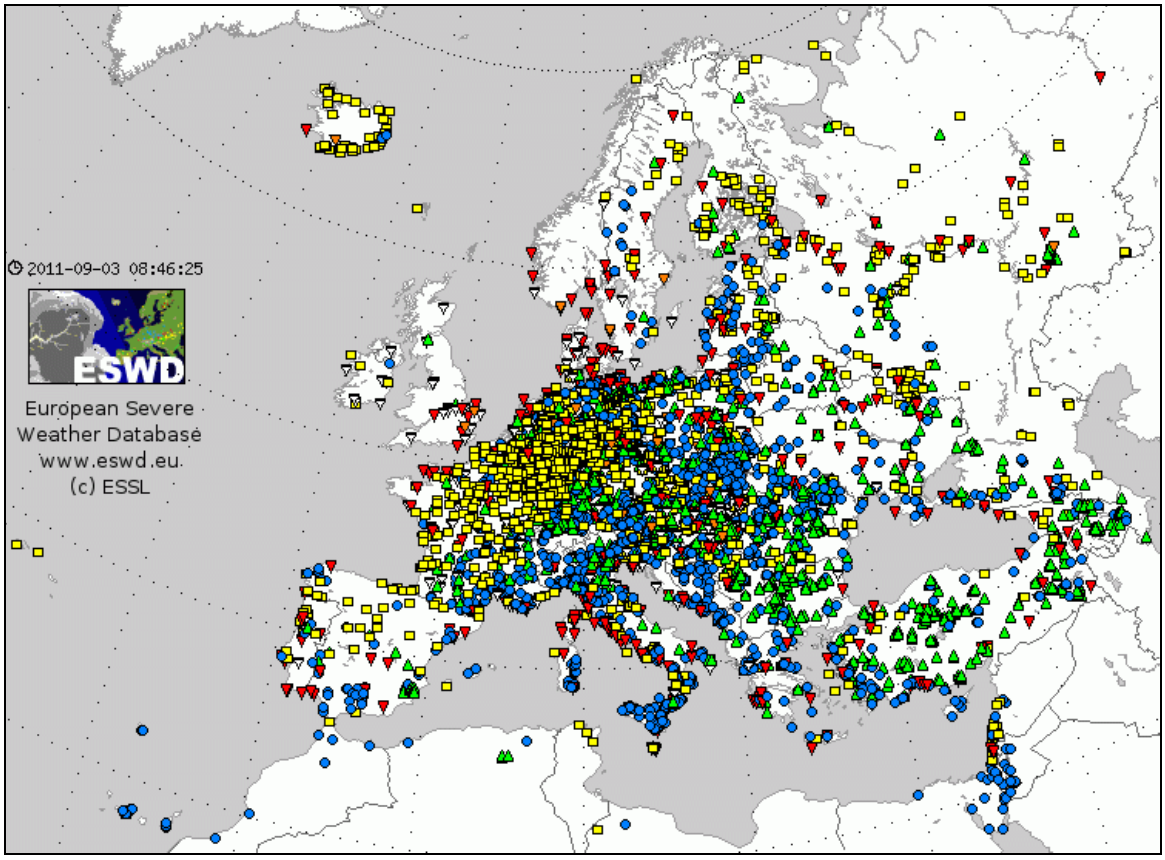

Figure 2.1: All 5573 reports from 2010 (requested at 3 Sep 2011).

2.1.1 Growth of the dataset

ESSL performs quality control of new reports in the data base supported by its partners on a national or regional level. The quality control procedure primarily consists of assigning the appropriate QC-level to each report. These QC- or quality control levels were defined by Dotzek (2009), as follows:

Acronym	Designation	Description	Assigned..
QC0	as received	new report, quality-control pending	…automatically, by general public
QC0+	plausibility checked	the report is plausible, given the overall meteorological situation in, or data from the affected region and timeframe.	…by partner organisation, partner NHMS or ESSL
QC1	report confirmed by reliable sources	only some aspects of the report are still under discussion	…by partner organisation, partner NHMS or ESSL
QC2	event fully verified	all information available about this event is verified, consistent and comes from reliable sources.	…by partner NHMS or ESSL

In 2010, ESSL was able to invest more resources than ever quality control. From May onward a half position was filled at ESSL dealing purely with data quality control. This, in addition with quality control efforts by ESSL's partners has led to a marked increase of events that could be confirmed by reliable sources (QC-level 1).

2.1.2 New technical developments and cooperation

Cooperation with several parties has been initiated in 2010, most of them requiring new technical developments.

Firstly, a system was developed that ensures that reports from the Finnish URSA database are transferred to the ESWD database automatically. URSA is a Finnish association of people interested in meteorology and astronomy that has developed a database of severe weather reports. These reports, that initially will include only hail reports, will undergo additional quality control at the end of each year, performed by meteorologists of the Finnish Meteorological Institute.

Furthermore, upon request of the ESSL member and partner ZAMG a first version of an ESWD "Nowcast mode" was developed. This mode enables any forecaster of ZAMG to see reports from Austria the moment they arrive, by automatically reloading the display at a configurable interval. Additionally, it is possible to select a minimal quality level for these displayed reports. This is especially useful if forecasters want to see reports only from the Austrian "Trusted Spotter Network" that is currently being set up in a cooperation among ZAMG, Skywarn Austria and ESSL.

2.2 Work on wind damage assessment

Work was undertaken by Bernold Feuerstein and colleagues in 2009, to document the *de facto* damage assessment procedures in Germany and adjacent regions, and to improve these. This work, being presented at the ECSS conference in Landshut in 2009, was continued in 2010 and resulted in a manuscript published in the ECSS Special Issue in 2011. In the light of ESSL's interest in the discussion on the damage-wind speed relationship, it is represented in the online platform of EF-scale stakeholders. This resulted in Nikolai Dotzek and Pieter Groenemeijer's online participation in a workshop on the future of the EF-scale, organized by Jim LaDue of the U.S. National Oceanographic and Atmospheric Administration (NOAA) Warning Decision Training Branch.

2.3 Third-party funded projects

2.3.1 EUMETSAT validation study on convective initiation nowcasting

Since August 2009, ESSL has been involved in a study commanded by EUMETSAT, which equipped the ESSL with a full scientist position until March 2010. Results of this study have been reported to EUMETSAT.

The study demonstrates the large potential of ESWD applications for storm detection and forecast or nowcasting/warning verification purposes. A concluding report has been delivered to EUMETSAT. ESSL is also part of the EUMETSAT Convection Working Group (CWG). For more information about the working group, see http://www.convection-wg.org

2.3.2 RegioExAKT

RegioExAKT is part of the klimazwei programme of the BMBF. Its main objective is the determination of the trends in occurrence of, and threat by, severe convective storms in (southern) Germany until 2030, as well as the development of adaptation concepts for targeted main users (Munich Reinsurance Group, Munich international airport) on the spatial and temporal scales relevant for their business operations. The interdisciplinary consortium of 12 institutions started the project in January 2007 with Nikolai Dotzek as coordinator for a three-year period which was extended until 31 May 2010. ESSL's contribution is climatologic research results based on the ESWD data for Germany. As one of its tasks, ESSL has developed an automatized data transfer of severe weather reports by Skywarn Germany into the ESWD. For more information, see http://www.regioexakt.de

2.3.3 EWENT

ESSL is part of a consortium of 9 institutions in the new EU project EWENT (Extreme Weather impacts on European Networks of Transport) within the 7th Framework programme. The project partners are: VTT Technical Research Centre of Finland (Coordinator), German Aerospace Center, Institute of Transport Economics (Norway), Foreca Consulting Ltd (Finland), Finnish Meteorological Institute (FMI), Meteorological Service of Cyprus, Österreichische Wasserstraßen Gmbh, World Meteorological Organisation. ESSL contributes to the work packages 1 (Phenomena: Identification and defination of extreme weather events), 2 (Probabilities: Estimation of probabilities of harmful weather events in changing climate and different scenarios), 5 (Evaluation: Impact evaluation and options for risk reduction and control) and 7 (Dissemination).

Within 2010, ESSL contributed to several EWENT reports. Firstly within WP1 ESSL had a prominent role in discussions that lead to the characterization of the severe events and the determination of their thresholds. It naturally was the most important participant in the discussion of desired enhancements to the European Severe Weather Database, these to be carried out as part of later parts of the project.

Additionally, in collaboration with FMI, severe weather data from Finland were added to the ESWD database. ESSL itself hired a new employee (Mathias Stampfl) to enter severe weather data from Austria into the ESWD. Another completed t=task was ESSL's participation in an EWENT workshop on the probabilities of weather extremes and harmful events and scenarios in Europe as a side event of the European Meteorological Society's Meeting in Zürich.

Finally, a start was made in improving the ESWD's accessibility, by increasing the number of languages of the interface with help of its members and personal partners in several European countries. In total, 14 languages are now available, the latest additions being Portuguese, Estonian, Russian and Turkish.

2.3.4 Evolution of Hail Storms over Europe in a Changing Climate

ESSL has become involved in the project "Evolution of Hail Storms over Europe in a Changing Climate" carried out by the UK Met Office, which is funded by the AXA Research Fund. Within this project, the Met Office seeks to create projections for the climatology of hailfall in the coming 80-100 years. ESSL plays a consulting role and will help to evaluate the Met Office's hail model. The project's concluding workshop is planned for November 2012. Most of ESSL's consultancy work will be carried out in 2011 and 2012.

2.4 European Conferences on Severe Storms

2.4.1 Preparations for the 6th ECSS in 2011

After some initial unclarity about the location of the 6th European Conference on Severe Storms, ESSL is happy to have found a partner local organizer in the Universitat de les Illes Balears (UIB), where the 6th conference within the series will take place from 3 to 7

October 2011. The conference venue will be the *Museo Es Baluard* next to the picturesque harbour of Palma de Mallorca. In December 2010, the *First Announcement* for the conference was distributed, and the Conference website opened after more detailed organizational coordination with the partners at (UIB) had taken place.

3 Publications and outreach

A wide range of outreach and PR activities have taken place in 2010.

3.1.1 Website

Firstly, the ESSL web site (www.essl.org) has been redesigned, and a content management system was introduced.

3.1.2 Invited talks

ESSL was represented at the ***5th Extreme Weather Congress*** (4–6 March 2010) in Bremerhaven, Germany, with its special audience of scientists and weather services as well as the public and the media. With more than 800 participants, the congress saw a new record attendance.

Thilo Kühne gave a talk about the present status of the European Severe Weather database ESWD and the new quality control levels (QCL). In a joint presentation, Thomas Sävert (Meteomedia AG) and Bernold Feuerstein (ESSL) discussed new information about a historic F4 tornado case in Brandenburg (former German Democratic Republic) in 1979.

Two side meetings at the Extreme Weather Congress were related to Skywarn Germany: The Skywarn Symposium and a meeting of the Skywarn Tornado Workgroup where the new QCL system was presented and discussed in detail.

In addition to these activities, Pieter Groenemeijer was invited to give a talk on ESSL's activities regarding the ESWD and forecasting severe weather at the Regional Office of the German Weather Service on 27 October 2010.

Furthermore, ESSL played a central role at the 2nd Tornado Workshop organized by the German Weather Service (DWD) in Offenbach 18-19 November 2010. ESSL was represented in the press conference and contributed in form of three invited talks given by ESSL members.

3.1.3 Media

Increasing severe weather awareness also helped ESSL to get more attention in the public media. On 17 January, Nikolai Dotzek and the ESSL appeared in a science magazine of the public German TV channel ARD featuring tornadoes in Europe. Nikolai Dotzek and Martin Hubrig appeared in a documentary which aired on the French/German TV channel Arte on 28 June 2010.

A German documentary on windstorms of the Bayerischer Rundfunk (Bavarian Broadcasting) featured Bernold Feuerstein and Pieter Groenemeijer. It was produced in December 2010 and aired on 20 February 2011.

3.1.4 Newsletter

Two ESSL Newsletters were released in 2010 keeping members informed of the Association's activities.

3.1.5 Other Activities

At the 2010 Annual Meeting of the European Meteorological Society, a session on atmospheric hazards was dedicated to Nikolai Dotzek at the ETH in Zürich (13-17 September 2010), chaired by ESSL members Fulvio Stel and Dario B. Giaiotti.

The information flyer and a poster addressing mainly potential new ESSL members or registered ESWD data users as well as tailored presentations for NMHS and private-sector users were further developed, updated and presented at various meetings, workshops and conferences.

ESSL has contributed to a case-study of the Convection Working Group by giving scientific advice. The Case study of a severe weather outbreak on 25 May 2009 can be visited here: http://www.convection-wg.org/case_study/20090525

3.1.6 Publications

Markowski, P., and N. Dotzek, 2010: Comments on "Proposed Conceptual Taxonomy for Proper Identification and Classification of Tornado Events". *Wea. Forecasting*, **25**, 338-340.

Dotzek, N., S. Emeis, C. Lefebvre, and J. Gerpott, 2010: Waterspouts over the North and Baltic Seas: Observations and climatology, prediction and reporting. *Meteorol. Z.*, **19**, 115-26 129.

Beck, V., and N. Dotzek, 2010: Reconstruction of near-surface tornado wind fields from forest damage. *J. Appl. Meteor. Climatol.*, **49**, 1517-1537.

3.1.7 List of presentations and conference contributions

Bell, A., 2010: Tornadoes in Romania – mesoscale environment and operational aspects, *2nd DWD Tornado Workshop*, Offenbach, 18 November (invited).

Feuerstein, B., 2010: ESSL – an introduction, *2nd DWD Tornado Workshop*, Offenbach, 18 November (invited).

Groenemeijer, P., 2010: ESWD Datenbank und Gewittervorhersage*, Regionalzentrale des DWD*, Munich, 27 October 2010 (invited).

Groenemeijer, P., T. Kühne, Z. Liang, A. Holzer, B. Feuerstein and N. Dotzek, 2010: Creating a comprehensive quality-controlled dataset of severe weather occurrence in Europe, *10th EMS Annual Meeting and the 8th European Conference on Applied Climatology (ECAC),* Zürich, 14 September

Groenemeijer, P., 2010: Severe thunderstorms in a changing climate: current data situation and plans, *EWENT Workshop on Estimation of Probabilities of Extreme and Harmful Weather Events in a Changing Climate,* Zürich, Switzerland, 14 September 2010.

Groenemeijer, P., 2010: ESWD Datenbank und Gewittervorhersage*, Regionalzentrale des DWD*, Munich, 27 October 2010 (invited).

Groenemeijer, P., 2010: ESWD – Performance and quality control, *2nd DWD Tornado Workshop*, Offenbach, 18 November (invited).

Holzer, A. M., A. Keul, T. Wostal, 2010: ... AND HERE COMES THE WEATHER - Austrian TV and radio weather news in the eye of the public, *10th EMS Annual Meeting and the 8th European Conference on Applied Climatology (ECAC),* Zürich, 16 September.

Holzer, A. M., 2010: Die „European Severe Weather Database" (ESWD) als Beispiel für eine benutzerorientierte Informationsplattform für Unwetterereignisse, *GEO/GEOSS Workshop*, Vienna, 25 November.

Holzer, A. M., 2010: New Applications of the European Severe Weather Database ESWD, *ZAMG TSN Workshop*, Vienna, 4 December.

Kühne, Th., 2010: Qualitätskontrolle und internationale Zusammenarbeit bei der Europäischen Unwetterdatenbank (ESWD)*, 5th Extremwetterkongress*, Bremerhaven, 4 March (invited).

Sander J., N. Dotzek, 2010: The impact of climate change on severe convective storms over Europe, *10th EMS Annual Meeting and the 8th European Conference on Applied Climatology (ECAC),* Zürich, 17 September.

Sävert, Th. and B. Feuerstein, 2010: Wenn Mähdrescher fliegen lernen – Seit 1968 kein F4 Tornado in Deutschland?*, 5th Extremwetterkongress*, Bremerhaven, 6 March (invited).

4 Financial and administrative report

The goal of the financial management in 2010 was to ensure a stable development, to secure the non-profit-status of the ESSL, and before all, to provide the necessary funds for the three statutory purposes of the ESSL:

1. Advance meteorology and related sciences in the field of research on severe convective storms and extreme weather events on a European level;
2. Operate and extend the European Severe Weather Database (ESWD);
3. Support or organize the European Conferences on Severe Storms (ECSS).

The passing away of our Director put many question marks about the future of ESSL. Therefore, it was the most urgent task of the financial management to get a sound overview of the consequences to contracts and funding as quickly as possible. In summer, intensive talks took place with our EWENT project coordinators and with DLR, which resulted in a practicable solution for the open project work originally attributed to Nikolai Dotzek.

It is important to note that the reserves from the financial year 2009 were key to the smooth and purposeful continuation of its work in the second half of 2010 with respect to the circumstances.

4.1 Overview

2010 was the second year in which ESSLs accounting was audited by an independent and sworn certified financial auditor: Ohland und Partner GbR, Pacellistr. 4, 80333 München, Germany.

The annual accounts for 2010 are shown the way the financial auditor prepared and delivered them to the Executive Board. Section 4.2 contains the details. The summarizing certificate for accounting of our certified financial auditor states:

"We herewith confirm, that the financial reporting for the period from January 1st to December 31st 2010 for the European Severe Storms Laboratory e.V. dated July 26th 2011 was duly developed from the provided accounting figures. Our activities do not give reason for any doubt in correctness and conclusiveness of bookkeeping. … Best regards (Steuer) Vereidigter Buchprüfer Steuerberater (Haberkorn Wirtschaftsprüfer Steuerberater".

The original certificate was duly forwarded to the Advisory council.

As in 2009, an external payroll accountant was again mandated during 2010 to take care of paperwork and bureaucratic handling of taxes and social insurances, which would otherwise exceed ESSL's internal administrative capacities.

In 2010, the ESSL has been employer for one full time scientific staff member (EUMETSAT project until February), four part time employees (ESSL Director, ESSL Technical Director, ESSL Treasurer and ESWD quality control manager), and three so-called "Mini-Jobbers", a form of minor employment according to the German law (ESSL

Deputy Director, ESWD quality controller and IT Developer). So, in total 8 employees were engaged in ESSL operations for at least part the year.

According to the three main statutory purposes of ESSL, the accounting, controlling and planning were carried out on the basis of *cost centres*. As required by the tax authorities, these distinguish between the ideational branch of ESSL (*Ideeller Bereich*, i.e. management of the association) and its branches directly serving the statutory purposes of the ESSL (*Zweckbetriebe*). Additionally, a marginal number of activities were booked under the commercial type branch (*wirtschaftlicher Geschäftsbetrieb*), thus fulfilling the requirements of the tax authorities.

4.2 Financial status 2010

The fourth full accounting year was dominated by further establishing administrative structures (beginning of the use of the bookkeeping software DATEV, proposed by our tax advisor) and the further build-up of a thorough accounting (e.g. finalization of cost centre lists), conforming to the law and tax regulations and allowing efficient controlling by the Treasurer. The accounting for 2010 can be found in the Appendix A.1.

The following figures from the annual accounts underline the tense situation in this year:

17.200,98 EUR of membership fees were obtained, slightly more than in 2009 (17.025,00 EUR).

69.769,22 EUR, much less than in 2009 (122.238,40 EUR) were obtained in projects (58.341,67 EUR), from ECSS activities (10.627,84 EUR), from commercial ESWD users (674,37 EUR) and from interest.

Including taxes, **total income** summed up to **90.823,08 EUR**.

Including taxes, **total expenses** summed up to **137.682,85 EUR**.

The major cost factors were personnel costs with 80.917,93 EUR (of this, 67.432,91 EUR for salaries and 13.485,02 EUR for social security), travel expenses with 10.838,54 EUR, tax advisor and external bookkeeping costs with 17.093,25 EUR and legal advice (especially needed in the tragic phase of 2010) with 9.532,50 EUR. Further details can be found in the expenses section of Appendix A.1.

As 2010 was a year in which no ECSS conference was organized, this contributed to a smaller turnover compared with the previous ECSS year 2009.

At the end of the business year, liquid assets at our bank accounts amounted to 29.130,59 EUR (compare: 78.138,36 EUR at the end of 2009 and 17.538,52 EUR at the end of 2008). In summary, the financial figures for 2009 showed a significant downward trend. It was the main task of the remnant Executive Board to improve this situation in the medium term.

The annual result is a negative 46.859,77 EUR (compare: positive 60.599,84 EUR in 2009, which enabled the ESSL to survive this difficult situation).

The financial planning for 2011 foresees quite stable financial levels, dependent on the probable scientific project Stepclim and a further increase in membership fees and ESWD user fees, mainly based on acquiring more members and users.

4.3 Administrative report

ESSL maintained a fully developed administration in compliance with its objectives:

Bookkeeping, financial and salaries transactions, management of contracts and invoices, membership and contact data administration, project planning and project budgeting, long term budgeting, staff and working timesheets administration, user administration – to name some important ones. The development of a general ESWD user agreement was completed in 2010.

The regular ESSL General Assembly (GA) took place as a side meeting of the EMS 2010 in Geneva, Switzerland, on 14 September 2010.

The main topics of the GA were the commemoration of Nikolai Dotzek, the report by the Executive Board, the election of a new Executive Board, the election of a new Advisory Council member, future projects, the next ECSS in Palma, and mayor amendments to the Articles of Association (AoA).

The most important amendments of the AoA are a now 5 instead of 4 headed Executive Board (Director, three Deputy Directors, Treasurer), clearer regulations for honorary members, regulations for the Advisory Council and the exterior representation of the association by members of the Executive Board. For details please refer to the Minutes of the General Assembly 2010. The current AoA always can be found on the ESSL webpages.

Three Individual Full Members, one Individual Supporting Member, two Institutional Full Members (the Austrian ZAMG and the Romanian National Meteorological Administration, NMA) and two Institutional Supporting Members (Deutsche Rückversicherung AG, and Willis Ltd.) joined ESSL in 2010.

One Individual Full Member passed away. ESSL is bemoaning its highly respected first Director Dr. Nikolai Dotzek.

In total, at the end of the year, the ESSL had

- 28 Individual Full Members,
- 2 Individual Supporting Members,
- Institutional Full Members,
- Institutional Supporting Members.

The complete member list is shown in the Appendix A.2.

4.4 Executive Board and Advisory Council

The Executive Board and the Advisory Council are two of the three bodies forming the ESSL. Fig. 4.1 outlines these and their responsibilities.

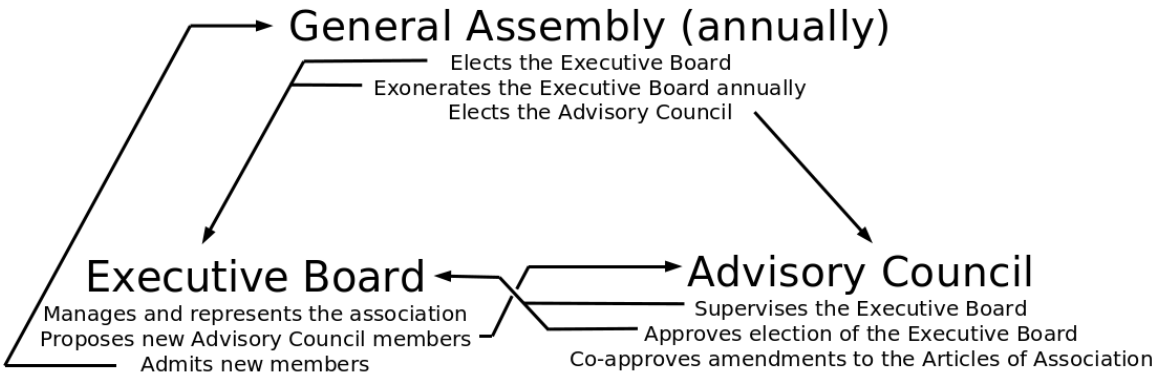

Figure 4.1: Bodies of the ESSL. The Advisory Council consists of six members from two groups (three members each): (1) Science, (2) NMHS / EUMETNET.

4.4.1 Executive Board

Until the passing away of our highly respected Director on the 29th of May 2010, the Executive Board consisted of:

- Dr. Nikolai Dotzek, Director.
- Dr. Bernold Feuerstein, deputy Director.
- Dr. Pieter Groenemeijer, Technical Director.
- Mr. Alois M. Holzer, Treasurer.

On the 30th of May 2010 Dr. Bernold Feuerstein took over the responsibility as Acting ESSL Director, according to the Articles of Association and Rules of Procedure of the Executive Board.

On the 14th of September 2010 the General Assembly elected a new Executive Board for the office period until the end of 2013, based on the amendments of the Articles of Association, effective upon registration at the register of associations (Court of Munich). This registration took place not earlier than on the 9th of February 2011. Therefore the three headed Acting Executive Board was still in office at the end of the year 2010.

The newly elected Executive Board, which has taken office on the 10th of February 2011 and was elected on the 14th of September 2010, consist of:

ESSL Director

Pieter Groenemeijer (*1979) studied Physics and Astronomy at Utrecht University specializing in Meteorology and Physical Oceanography, graduating in 2005. During a semester at the University of Oklahoma's School of Meteorology he became fascinated with convective storms and the infrastructure in place in the USA to warn for the hazards they produce. After returning to the Netherlands he did a research internship at the Dutch Meteorological Institute (KNMI) focusing on the detection of convective storm characteristics with Doppler radar. Additionally, he co-Initiated the European Storm Forecast Experiment (ESTOFEX), an experiment with the goal to enhance severe convective storms forecasting in Europe. http://www.estofex.org. In 2005, he became a visiting meteorologist at the Finnish Meteorological Institute, where he was lead author of a guide on forecasting severe convective storms. At ESTOFEX, he developed a first version of the European Severe Weather Database. In 2006, he became a founding member and Technical Director of the European Severe Storms Laboratory. In 2009 he obtained his Ph.D. degree from the University of Karlsruhe on his thesis entitled “Convective storm development in contrasting thermodynamic and kinematic environments””. Since June 2009 he has been a Post-doctoral researcher at Ludwig-Maximilians-University Munich. The topic of research is the implementation of the Plant-Craig stochastic convection scheme in the COSMO model for use in an ensemble forecast system

ESSL Deputy Director

Bernold Feuerstein (*1969) studied physics at the University of Giessen where he graduated in 1994 with a diploma thesis in experimental nuclear physics for which he received the Study Award of the WE-Heraeus Foundation). He then joined the group of Prof. Werner Mehlhorn at the University of Freiburg working on near-threshold electron impact ionization and excitation of alkaline and alkaline earth atoms for which he received a Ph. D. degree in natural sciences in 1999. With the group of Mehlhorn's successor Prof. Joachim Ullrich he moved to the Max Planck Institute for Nuclear Physics (Heidelberg) in 2001. He spent one year in 2002/03 at the Kansas State University (Manhattan, Kansas, USA) as a research fellow working on theoretical modelling of strong ultra short laser pulses interacting with small molecules. Back in Heidelberg he was involved in experimental studies on wave packet dynamics of small molecules in strong laser fields which were motivated by the aforementioned theoretical work.

In 2006 he got the Habilitation degree and the venia legendi in physics and became a lecturer at the University of Heidelberg. Since 2007 Bernold Feuerstein is responsible for the public relations of the Max Planck Institute for Nuclear Physics and was member of the local organizing committee of several international conferences. His scientific work comprises more than 50 publications in peer-reviewed journals. His long-term vivid interest in meteorology and severe local storms in particular lead him to join the network TorDACH (founded by Nikolai Dotzek in 1997) in 2003 and later in 2006 the ESSL e.V. as one of the founding members and its deputy director since then. He also published a

couple of papers in meteorological journals. In 2009 he was member of the Scientific Programme Committee of the 5th European Conference on Severe Storms in Landshut.

ESSL Deputy Director

Dr. Aurora Bell is a physicist engineer, scientist and principal forecaster and since 2010 the Executive-Scientific Deputy for Operational Meteorology at the National Meteorological Administration of Romania. From 1989 to 2009 she was the leader of the Laboratory for Nowcasting Techniques. Currently, she is responsible for the management of 112 scientific and meteorologist staff, research and development for short-term forecasting, nowcasting and severe thunderstorm warning including training programmes for Southeast Europe forecasters as well as relations with government, ministry and mass media on severe weather. Her research addresses atmospheric deep convection and related phenomena, orographic effects on moist tropospheric flows and Doppler radar observations of storms.

Aurora Bell serves as a lecturer at the National School of Meteorology, coordinates student dissertations on MS in physics and was also active in several WMO international courses and workshops. She has been involved in a number of international projects and conferences such as EUFAR and HYDRATE (FP6), ERAD-2008 (Finland), WSN09 (Canada) and is designated chair of ERAD-2010 to be held in Romania. In addition, she is member of several WMO working groups, organized curricula for lecturing with invited professors in Romania and is also active in organizing and teaching courses for civil defence and mass media.

ESSL Deputy Director

Dr. Víctor Homar Santaner is a staff researcher and lecturer at the Physics Department of the University of the Balearic Islands. His main field of expertise is the Meteorology and Climatology of the western Mediterranean region with special focus on extreme weather events. He developed and applied diagnosis and simulation techniques to analyse and forecast the synoptic and mesoscale scenarios responsible for the genesis of flash-flood producing convective systems or severe weather outbreaks using numerical high-resolution mesoscale models. He also investigated fundamental aspects of predictability and the use of ensemble prediction systems for the forecast of extreme weather events. More recently, Víctor Homar has been involved in the assessment of the regional climate change impacts using statistical downscaling techniques. He has published more than 30 papers in international journals and numerous technical documents on these subjects.

Víctor has been involved in international research projects such as MEDEX, THORPEX, EUCOS and various INTERREG calls. Currently, he is involved in HyMeX as an active researcher, task-team leader and member of the International Science Steering Committee. In addition, he is associate editor of Journal of Atmospheric Research. In the

past he worked at the National Severe Storms Laboratory (NSSL) for more than two and a half years and has been determinedly involved in the European severe weather community, as shown by his participation in all ESSC editions since the year 2000 in Toulouse and his firm support for the consolidation of the ESSL.

ESSL Treasurer

Alois M. Holzer (*1976) is a senior weather forecaster and in 2003 initiated the Austrian severe weather warnings project at the weather forecasting department of the Austrian Broadcasting Corporation (ORF). There he started as a volunteer in 1997, shortly after beginning his studies at the meteorology department (University of Vienna) in 1996, where besides his interest in mountain meteorology, tropical meteorology and the neighbouring sciences of hydrology, geophysics and seismology he also worked as a tutor in glaciology.

From 1995 to 2000 he self-employed in the field of applied meteorology and in 1996 he wrote a book about the local climate of his home region in Lower Austria. From 1997 to 2006 he was the Austrian representative of the TorDACH network and in 2006 he was a founding member of the ESSL. Since 1998 he authored or co-authored scientific papers focussed on tornadoes and severe weather climatology in central Europe and worked as a trainer for operational meteorologists. In 2007 he has been elected Treasurer of the European Severe Storms Laboratory and since then not only managed ESSL finances, but also prepared the budget for several scientific projects (e.g. EWENT, where he is member of the broad management team). He co-organized the ECSS 2009 in Landshut together with Nikolai Dotzek.

His preferred fields of activity are interdisciplinary works based on his knowledge of severe weather climatology, media meteorology applications and business skills. This background, the early graduation at a business school, and his practical experience qualify him for the work as an ESSL Treasurer.

4.4.2 Advisory Council

The Advisory Council consist of six members (three of the Science and three of the NMHS groups). Dr. Steinhorst retired at the end of 2010. His place took over Hans-Joachim Koppert, who was elected at the General Assembly in Zürich on the 14th of September 2010. His first period of office will last from January 2011 to December 2014.

Hans-Joachim Koppert is the head of the department “Meteorological Analysis and Modelling” at the German Weather Service (DWD) since 2006 where he is responsible for the assimilation systems and the entire model chain including GME, COSMO-EU und COSMO-DE. He is also chairman of the COSMO Steering Committee. He studied mesoscale meteorology at Darmstadt Technical University and joined the DWD in 1980 where he started as a meteorologist at the analysis and forecast centre. In the unit “Fundamental Questions of Synoptic Meteorology” he developed automatic significant weather charts as well as the visualization system TriVis

for media (used by German public TV channels) and worked on sounding analysis and calculation of parameters for diagnosis like IPV. Later, he moved to the IT division and became the head of the application development unit where he initiated the development of the meteorological workstation “NinJo” as an international project. From 2002 to 2006 he managed the central development unit of the research and development division.

Hans-Joachim Koppert’s basic interest was and still is the process of weather forecasting including modelling, algorithms and visualization. Since the quality of input data and processing is crucial for forecasts and warnings he is looking for an optimal integration of them in combination with a profound knowledge of the meteorological background. Forecast skills are often measured against local severe weather events – thus, he expects a substantial impact from an active role of the DWD in the ESSL on the improvement of weather forecast processing.

Advisory Councillors in 2010:

Dr. Vincenzo Levizzani (CNR, Italy)

Prof. Dr. Daniel Rosenfeld (HUJI, Israel)

Prof. Dr. Robert Sausen (DLR, Germany), elected chair of the Advisory Council

Prof. Dr. David M. Schultz (FMI, Finland)

Dr. Michael Staudinger (ZAMG, Austria)

Dr. Gerhard Steinhorst (DWD, Germany)

Appendices

Appendix A1: Annual Accounts 2010

Allocation of Profit 2010 due to German Tax Regulations (Financial Reporting 2010), and

Verification of Compliance with Local Regulations for Non Profit Organisations

by the financial Auditors Ohland and Partner, Munich.

Tax profit statement for the period from 01.01.2010 to 31.12.2010

European Severe Storms Laboratory e.V., Wessling

		EURO
A.	INCOME	
1.	Income	85 717.94
2.	Neutral Income	1 252.26
3.	VAT	3 852.88
	TOTAL INCOME	90 823.08
B.	EXPENSES	
1.	Personnel costs	
a)	Salaries	67 432.91
b)	Social contributions	13 485.02
2.	Taxes, Insurances and contributions	61.00
3.	Operating expenses and travel costs	11 393.54
4.	Depreciation	805.71
5.	Other operating expenses	32 919.11
6.	Input VAT	1 825.18
7.	VAT payments	6 630.60
	Total Costs	134 553.07
8.	Neutral costs	3 129.78
	TOTAL EXPENSES	137 682.85
	DEFICIT	46 859.77

Tax Branch of Association	Income	Expenditure	PROFIT/LOSS
Ideational non profit sector	6 465.00	67 986.47	-61 521.47
Tax Exempt Posts	312.26	0.00	312.26
Special purpose activities	81 243.32	65 554.51	15.688.81
Other business activities	2 802.50	4 141.87	-1.339.37
Total	**90 823.08**	**137 682.85**	**-46 859.77**

Record of accounts for the tax profit statement for the period from 01.01.2010 to 31.12.2010

Account Description	EURO	EURO
INCOME		85 717.94
Membership fees	5 525.00	
EU Contribution	13 680.00	
Contributions others	2 000.00	
Income ECSS	10 627.84	
Income 7 % VAT	42 661.67	
Reversing entry ECSS fee	186.92	
Membership fees 7 % VAT	10 735.98	
ESWD users non-members 19% VAT	674.37	
NEUTRAL INCOME		1 252.26
Donations	940.00	
Interest and similar income	312.26	
VALUE ADDED TAX		3 852.88
VAT 7 %	3 724.75	
VAT 19 %	128.13	
PERSONNEL COSTS		67 432.91
Wage continuation (illness, death)	-425.40	
Salaries	52 258.31	
Minijobs	15 600.00	
SOCIAL SECURITY COSTS		13 485.02
Social security	13 338.70	
Fees Berufsgenossenschaft	146.32	
TAXES, INSURANCES, FEES		61.00
Other public fees	61.00	
OPERATING EXPENSES and TRAVEL COSTS		11 393.54
Operating expenses	19.92	

Hospitality costs	535.08	
Travel expenses employees	5 321.85	
Travel expenses, transportation costs	4 163.51	
Travel expenses, per diems	129.00	
Travel expenses, charges for overnight	75.00	
Travel expenses, transportation lump sums per km	1 136.10	
Travel costs Board Members	13.08	
DEPRECIATION		165.71
Depreciation on fixed assets	165.71	
Depreciation on low-value assets	379.00	
Depreciation on collected items	261.00	640.00
OTHER COSTS		32 919.11
Leasing costs	98.00	
Third party services	3 069.98	
Postage	285.08	
Telephone	551.76	
Telefax and Internet	838.54	
Office supplies	959.58	
Papers, books	29.62	
Training costs	24.37	
Legal advice	9 532.50	
Annual Accounts by tax advisor	9 738.50	
Tax advice by tax advisor	4 790.00	
Bookkeeping by tax advisor	2 564.75	
Rents	245.00	
Bank account fees	85.30	
Other office expenses	106.13	
INPUT VAT		1 825.18
VAT 7 %	32.84	
VAT 19 %	1 792.34	
VAT PAYMENTS		6 630.60
VAT prepayments	2 836.80	
VAT year 2009	3 793.80	
NEUTRAL COSTS		3 129.78
Input VAT not deductible 7 %	2.10	
Input VAT not deductible 19 %	3 127.68	
LOSS		-46 859.77

Summary of the financial audit of 2010, provided by the certified financial auditor "Ohland und Partner" (Munich, Germany) to the ESSL on 26 July 2011. Translation from the German original into English by ESSL - proofed by the chair of the Advisory Council.

The full audit was presented to the Advisory Council and to the General Assembly.

Statement of asset per 31.12.2010

ASSETS	EURO		EURO	**EQUITY**
		A. EQUITY		
A. FIXED ASSET		**I. Retained Earnings**		
I. Tangible Assets		**1. General Reserves**	**8 046.28**	
1. Other fixed assets and equipment	**2 148.00**	**2. Current Reserves**	**7 700.00**	**15 746.28**
		II. Profit to be carried forward		
		1. Non profit sector	**14 592.98**	
		2. Asset management	**128.57**	
B. CURRENT ASSETS		**3. Other tax privileged special purpose activities**	**1 889.76**	
I. Cash at banks	**29 130.59**	**4. Other business activities**	**41.59**	**16 652.90**
		III. Remaining profit current year		**-1 120.59**
	31 278.59			**31 278.59**

Record of accounts for the statement of assets per 31.12.2010

Account Description	**EUR**	**EUR**
FIXED ASSETS		
Fixed assets and equipment		
Office equipment	**1 428.00**	
Low-value assets coll.	**720.00**	
CURRENT ASSETS		
Cash at banks (Raiffeisenkasse Gilching)	**29 130.59**	
Total ASSETS		**31 278.59**
EQUITY		
General Reserves	**8 046.28**	
Current Reserves	**7 700.00**	

Carry forward non profit sector	14 592.98	
Asset management	128.57	
Other tax privileged special purpose activities	1 889.76	
Other business activities	41.59	
Remaining profit current year	-1 120.59	
Total EQUITY		31 278.59

Cost accounting ESSL - all business sectors

INCOME	EURO
1100 Membership fees	16 260.98
1110 EU Contributions	13 680.00
1170 Contributions others	2 000.00
1200 Donations	940.00
1300 Income special purpose activities 7 % VAT	42 661.67
1330 Income ECSS activities 0 % VAT	10 627.84
1350 Income ECSS fees 7 % VAT	-186.92
1470 Other Income 19 % VAT	674.37
1500 VAT 7 %	3 724.75
1550 VAT 19 %	128.13
1600 Interest Income	312.26
1900 INCOME total	90 823.08
COSTS	
2010 Salaries	67 432.91
2050 Social security	13 338.70
2070 Social security Berufsgenossenschaft	146.32
2090 Total personnel	80 917.93
2510 Third party services	3 069.98
2530 Travel expenses employees	10 838.54
2600 Depreciation	165.71
2610 Depreciation low-value items	640.00
2700 Insurances	0.00
2730 Other levies	61.00
2900 Other operating expenses	19.92
2920 Hospitality costs	535.08
2990 VAT not deductible	3 129.78
3000 VAT proportionate	0.00
3005 VAT deductible	1 825.18
3010 Postages	285.08
3020 Telephone, Internet	1 390.30
3030 IT supply	98.00
3040 Office supply	959.58
3050 Papers, books	29.62

3060 Training costs	**24.37**
3070 Legal advice	**9 532.50**
3080 Tax advice	**4 790.00**
3090 Annual accounts costs tax advisor	**9 738.50**
3100 Bookkeeping tax advisor	**2 564.75**
3120 Bank account costs	**85.30**
3140 Other costs	**351.13**
3200 Subtotal costs	**131 052.25**
4100 VAT prepayments	**2 836.80**
4110 VAT payments for 2009	**3 793.80**
4500 COSTS total	**137 682.85**
4600 LOSS	**-46 859.77**

Appendix A2: Member list 2010

The following table shows all ESSL members as of 31 December 2010, sorted according to their ESSL-ID (which corresponds in ascending order to the beginning date of the ESSL membership). The 9 remaining founding member names are printed in italics. The given country corresponds to the main residence or statutory seat, not necessarily to the nationality.

INDF .... Individual Full Member
INDS .... Individual Supporting Member
INSF …. Institutional Full Member
INSS …. Institutional Supporting Member

INDF	*Dr. Bernold Feuerstein*	GERMANY
INDF	*Dr. Dario Giaiotti*	ITALY
INDF	*Dr. Pieter Groenemeijer*	GERMANY
INDF	*Alois M. Holzer*	AUSTRIA
INDF	*Dr. Maria-Carmen Llasat-Botija*	SPAIN
INDF	*Dr. Romualdo Romero*	SPAIN
INDF	*Dr. Martin Setvák*	CZECH REPUBLIC
INDF	*Dr. Fulvio Stel*	ITALY
INDF	*Jenni Rauhala*	FINLAND
INDF	Thilo Kühne	GERMANY
INDF	Helge Tuschy	GERMANY
INDF	Mag. Georg Pistotnik	AUSTRIA
INDF	Zhongjian Liang	GERMANY
INDF	Lionel Peyraud	SWITZERLAND
INDF	Mag. Thomas Krennert	AUSTRIA
INDF	Dr. Johannes Dahl	USA
INDF	Martin Hubrig	GERMANY
INDF	Oliver Schlenczek	GERMANY
INDF	Victor Homar Santaner	SPAIN
INDF	Sanjay Sharma	INDIA, ASIA
INDF	Dr. Aurora Bell	ROMANIA
INDF	Sorin Burcea	ROMANIA

INDF	Bogdan Antonescu	ROMANIA
INDF	Dr. Marianne König	GERMANY
INDF	Dr. Volker Gärtner	GERMANY
INDF	Dr. Michael Kunz	GERMANY
INDF	Erik Dirksen	GERMANY
INDF	Emmanuel Wesolek	FRANCE
INDS	Casper ter Kuile	NETHERLANDS
INDS	Stefan Meulemans	SWITZERLAND
INSF	DWD, Deutscher Wetterdienst	GERMANY
INSF	EUMETSAT	GERMANY
INSF	AUSTRO CONTROL	AUSTRIA
INSF	ZAMG, Zentralanstalt für Meteorologie und Geodynamik	AUSTRIA
INSF	NMA, National Meteorological Administration of Romania	ROMANIA
INSS	Münchener Rückversicherungs-Gesellschaft AG	GERMANY
INSS	Tokio Marine Technologies LLC	USA
INSS	Willis Ltd	UNITED KINGDOM
INSS	Deutsche Rückversicherung	GERMANY