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of the European Severe Storms Laboratory e. V. (ESSL)

Review of the 5th European Conference on Severe Storms, ECSS 2009

The 5th European Conference on Severe Storms organized by the ESSL was held in the City of Landshut (Bavaria) 12–16 October attracting 207 researchers from 41 countries, among them almost all "top scientists" in that growing community. Current issues of severe local storm phenomena were discussed in almost 100 talks and about 130 poster presentations. More than 10 participants each came from Germany, USA, Spain, Czech Republic and Italy. Although it is a European conference, the large group of US scientist and the growing number of contributions from Japan, India and South America demonstrates that severe storms are in fact a global issue. One example is the new finding that the lightning activity maximum precedes hurricane intensity maximum, which could be helpful for hurricane intensity predictions.

Not surprisingly, climate change and its relationship to the occurrence and intensity of local storms was one of the "hot topics" of the conference and possibly the most interesting part for the public. However, so far no unambiguous trend of more frequent or intense storms can be proven from the available data, but on the other hand it cannot be ruled out, either. We now start to get more detailed information from regional climate models about the future probability of weather situations that may support the development of severe storms. Thus, more detailed information about the environment and genesis of severe events is needed. One example is 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 including probes and even an armoured vehicle being placed in the path of the tornado. Other presentations focused on tornado events in Europe like Birmingham (UK) on 28 July 2006 or the F4 tornado of Hautmont (F) on 3 August last year.

The participants of the 5th ECSS in Landshut (Bavaria) 2009. (Photo: Karl-Heinz Koos, DLR)

Even though tornadoes may be considered as the most spectacular severe weather phenomenon, the socio-economic impact of flash floods, large hail, damaging straight-line winds and lightning is much higher. One key role plays the modelling and forecasting of supercells which are well-known for being most capable of the aforementioned hazards. Advances in numerical predictions like the operational COSMO-DE model of the German Weather Service DWD allow for an explicit forecast of supercell probabilities. Connected with improved nowcasting and warning is the problem of public awareness. Recent studies show that in Europe severe weather warnings are likely misunderstood by the public and the perception of hazards often differs significantly from reality.

Pieter Groenemeijer (technical director ESSL) recieves the "365 Landmarks in the Land of Ideas 2009" award from Deutsche Bank representative Achim Baumhoer.

Databases become more and more important for climatology, hazard assessments and forecast verification since homogeneous information about the occurrence of severe storms was rather limited in the past. As an outstanding example, the ESSL-operated European Severe Weather Database (ESWD) was awarded the “365 Landmarks” prize in this year’s Land of Ideas contest of the German government.

Jean-Baptiste Cohuet (middle) receives the Heino Tooming Award 2009 from ESSL’s director and ECSS chair Nikolai Dotzek (left) and ESSL’s deputy director Bernold Feuerstein (right). (Photo: Chuck Doswell)

The Heino Tooming Award 2009 was presented to Jean-Baptiste Cohuet, Romu Romero, Victor Homar, Veronique Ducroq and Climent Ramis for their presentation “Maritime convective initiation of the severe thunderstorm of 4 October 2007 in Mallorca: Numerical experiments”. 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.

Ulrike Wissmeier (LMU Munich) and Zoltán Polyánsky (Hungarian Meteorological Service, Budapest) were honored with the Young Scientist Travel Award of the European Meteorological Society (EMS). Ulrike Wissmeier works on modelling tropical severe multicellular thunderstorms in the group of Prof. Roger Smith at the LMU Munich. Zoltán Polyánsky reported on the formation of funnel clouds and tornados in Hungary along a stationary wind shift boundaries underneath developing cumulonimbus clouds.

EMS Young Scientist Travel Award, from left: Ulrike Wissmeier, Nikolai Dotzek, Alois Holzer, Zoltán Polyánsky, Bernold Feuerstein, Pieter Groenemeijer.

In 2009 the still growing severe storms community in Europe and beyond has exceeded the “200 participants” threshold on an even higher scientific level. Since the first ECSS in Toulouse in 2000 this is a remarkable development which emphasizes the importance of severe weather research.The proceedings of the 5th ECSS will appear in the refereed literature as a Special Issue of the Journal Atmospheric Research.

Deadline for article submission: 15 January 2010

ECSS website: ***http://www.essl.org/ECSS/2009/***

New institutional members

Austro Control (2009) –
Air navigation services company
that controls Austrian airspace.

Willis Re (from 1 January 2010) –
Global reinsurance unit of
Willis Group Holdings.

Annual Report 2008

The ESSL Annual Report 2008 is available on the ESSL’s websites in PDF format under:
http://www.essl.org/reports/adm/ESSL-admin-rep-2009-01.pdf

Scientific projects

ESSL is one of the project partners in the new EU FP7 project EWENT (Extreme Weather impacts on European Networks of Transport). Project Partners: VTT Technical Research Centre of Finland (Coordinator), German Aerospace Center, Institute of Transport Economics (Norway), Foreca Consulting Ltd (Finland), Finnish Meteorological Institute, Meteorological Service of Cyprus, Österreichische Wasserstraßen Gmbh, World Meteorological Organisation. The EWENT kick-off meeting took place Espoo, Finland, 2–3 December 2009. The project started on 1 December 2009 and will run for 2½ years.

As one of its tasks in the RegioExAKT project (www.regioexakt.de), ESSL has developed an automatized data transfer of severe weather reports by Skywarn Germany into the ESWD. This procedure became operational on 1 July 2009.

Bernold Feuerstein
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