10\textsuperscript{th} European Conference on Severe Storms

Kraków, Poland

4 – 8 November 2019

Programme
### Programme overview - ECSS2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
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<tr>
<td>09:00</td>
<td>OPENING SESSION</td>
<td>Session 1: Convective storm and tornado dynamics</td>
<td>Session 7: Satellite studies of storms and their environment</td>
<td>Session 5, continued</td>
<td>Session 10: Storm climatology, risk assessments and relation to climate change</td>
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<td>Session 4: Field observations and case studies</td>
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<td>14:30</td>
<td>Session 9: Storm microphysics, electrification, lightning and hail</td>
<td>14:30 ECSS press briefing (room Attic)</td>
<td>14:30 Bus transfer to Salt Mine.</td>
<td>15:00 CWG splinter meeting (room Attic)</td>
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<td>18:30</td>
<td>18:30 INFORMAL ICEBREAKER RECEPTION</td>
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**On site registration desk opening hours:**

Sun 15:00 – 20:00  
Mon 08:00 – 18:00  
Tue – Fri starting at 08:30

All printed programme information is as of 24 October 2019. Please check local announcements or see ECSS message board or tweets for latest updates.

ECSS Twitter updates by @essl_ecss.

Please use the hashtag #ecss2019 for your tweets.

**ESSL General Assembly:**  Sun, 3 Nov 2019, 19:30, room Attic
Sunday, 3 November 2019

Location: Conference Lobby
15:00–20:00

On site registration.

Location: Room Attic
19:30–21:00

ESSL General Assembly
For members of the European Severe Storms Laboratory.

Monday, 4 November 2019

Location: Lecture room
09:00–09:30

A Opening session

09:30–10:45

Session 4
Field Observations and Case Studies

09:30–09:45: ECSS2019-183
Targeted Observation by Radars and UAS of Supercells (TORUS): Summary of the 2019 field campaign
Houston, Adam; Argrow, Brian; Coniglio, Michael; Frew, Eric; Rasmussen, Erik; Weiss, Christopher; Ziegler, Conrad

09:45–10:00: ECSS2019-47
Implementation and use of the Model for the Prediction Across Scales (MPAS) for extended, convection-permitting forecast guidance during RELAMPAGO
Trapp, Robert

10:00–10:15: ECSS2019-84
Overview of convection initiation events during the RELAMPAGO-CACTI project
Marquis, James; Wilson, Jim; Varble, Adam

10:15–10:30: ECSS2019-163
Investigating an extraordinary mesocyclonic tornado in the coastline of Mediterranean, Turkey
Ozturk, Kurtulus; Tastan, Melik Ahmet

10:30–10:45: ECSS2019-106
Wind gusts associated with mesovortices in the inner core of Typhoon GONI (2015)
Mashiko, Wataru

END OF ORAL PROGRAMME SESSION 4

10:45 Coffee break, sponsored by EUMETSAT

11:30–12:45

Session 8
Radar studies of storms and their environment

11:30–11:45: ECSS2019-50
Challenges of Radar Quantitative Precipitation Estimation in Stormy Conditions
Besic, Nikola; Yu, Nan; Le Bastard, Tony; Augros, Clotilde; Gaussiat, Nicolas

11:45–12:00: ECSS2019-100
Operational benefits to correcting S-Band differential reflectivity for hail detection
Kingfield, Darrel; French, Michael

12:00–12:15: ECSS2019-146
A Polarimetric Radar Climatology of Supercell Thunderstorms in the United States
French, Michael; Kingfield, Darrel; Tuftedal, Kristofer; Segall, Jacob; Snyder, Jeffrey

Towards a better understanding of the role of topography in the motion of severe storms in Catalonia: First results with C-band dual-Doppler analysis
del Moral, Anna; Weckwerth, Tammy M.; Rigo, Tomeu; Bell, Michael M.; Llasat, Maria Carme

12:30–12:45: ECSS2019-88
Environments conducive for severe convective winds in Europe
Pacey, George

END OF ORAL PROGRAMME SESSION 8

13:00 Lunch break
14:30–17:30

Session 9
Storm microphysics, electrification, lightning and hail

14:30–15:00: ECSS2019-156
Influences on Hail Size as Inferred from Hailstone Growth Trajectory Model Calculations (solicited)
Kumjian, Matthew; Lombardo, Kelly

15:00–15:15: ECSS2019-135
Detection and monitoring of mid latitude convective rainfall using H-SAF blended SEVIRI and LEO MW convection precipitation product
Lapeta, Bozena; Melfi, Davide; Iwański, Rafal; Struzik, Piotr

The role of melting and shedding in supercells and squall lines
Lebo, Zachary; Kacan, Kevin

15:30–15:45: ECSS2019-141
The particle-based ice microphysics McSnow in ICON
Siewert, Christoph; Seifert, Axel

15:45–16:00: ECSS2019-110
Application of machine learning to large hail prediction - the importance of radar reflectivity, lightning occurrence and convective parameters derived from ERA5
Czernecki, Bartosz; Taszarek, Mateusz; Marosz, Michał; Kolendowicz, Leszek; Półrolniczak, Marek; Wyszogrodzki, Andrzej; Sztuc, Jan

15:45 Coffee break, sponsored by EUMETSAT

16:45–17:00: ECSS2019-160
Are lightning initiation locations and inferred charge regions influenced by local updraft variations?
Chmielewski, Vanna; MacGorman, Donald; Biggerstaff, Michael; Betten, Daniel; DiGangi, Elizabeth

17:00–17:15: ECSS2019-211
High speed video campaigns and meteorological conditions related to Gigantic Jets in Colombia
van der Velde, Oscar; Montanyà, Joan; López, Jesús; Fabrò, Ferran; Cummer, Steven

17:15–17:30: ECSS2019-4
Mesoscale lightning discharges seen from space
Goodman, Steven; Virts, Katrina

END OF ORAL PROGRAMME SESSION 9

17:30–18:15

Session 3
Impact of storms on society, impact mitigation and early warning systems

17:30–17:45: ECSS2019-63
Impact-Based Severe Early Weather Warning System in South Africa: Getting the message to the ground level
Webster, Elizabeth

17:45–18:00: ECSS2019-30
Learning lessons from deaths and injuries due to lightning in Western Europe
Schmitt, Stéphane; Kreitz, Michaël

18:00–18:15: ECSS2019-155
General public’s preparedness and precautionary measures ahead of a severe thunderstorm outbreak in Southern Finland on 12 August 2017
Punkka, Ari-Juhani; Laurikainen, Heikki; Kekki, Tuula; Ruuhela, Reija; Pilli-Silhvolka, Karolina; Harjanne, Atte

END OF ORAL PROGRAMME SESSION 3

18:30–20:30

B Icebreaker
Informal welcome cocktail and hors d’oeuvres.

Tuesday, 5 November 2019

Location: Lecture room
09:00–13:00

Session 1
Convective storm and tornado dynamics

09:00–09:30: ECSS2019-219
Insights into Tornado genesis from integrals of the vorticity equation and from angular-momentum advection (solicited)
Davies-Jones, Robert

09:30–09:45: ECSS2019-42
The Impact of Coastal Topography on Mesoscale Convective System Dynamics
Lombardo, Kelly; Wu, Fan

09:45–10:00: ECSS2019-175
The Effects of Idealized Topography Shape and Location on the Generation of Intense Near-Surface Vertical Vorticity in Supercells
Katona, Branden; Markowski, Paul
<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>10:00</td>
<td>ECSS2019-168</td>
<td>Outflow Surges in Simulated Supercell-Like Storms and their Influence on Tornado Development</td>
<td>Fischer, Jannick; Dahl, Johannes</td>
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<td>10:15</td>
<td>ECSS2019-178</td>
<td>Ensemble Experiments on a Maritime Meso-β-scale Vortex that Spawned Tornado-like Vortices causing shipwrecks</td>
<td>Tochimoto, Eigo; Yokota, Sho; Niino, Hiroshi; Yanase, Wataru</td>
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<td>10:30</td>
<td>ECSS2019-94</td>
<td>Dynamics of nocturnal convective systems</td>
<td>Parker, Matthew</td>
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<td>Conference Photo &amp; Coffee break</td>
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<td>11:30</td>
<td>ECSS2019-203</td>
<td>Tornadogenesis within a Supercell Storm near a Meiuyu Frontal System in Eastern China: Dynamical Analyses based on a Tornado-Resolving Real-Data Simulation</td>
<td>Xue, Ming; Wang, Shiqi; Min, Jinzhong</td>
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<td>11:45</td>
<td>ECSS2019-159</td>
<td>Observations of the Streamwise Vorticity Current from Project TORUS</td>
<td>Weiss, Christopher; Schueth, Alex; Houston, Adam</td>
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<td>12:00</td>
<td>ECSS2019-28</td>
<td>Mechanisms leading to the genesis of a tornado-scale vortex in an Argentinian supercell observed during the RELAMPAGO field campaign</td>
<td>Wurman, Josh; Kosiba, Karen; Trapp, Jeff; Kumjian, Matt</td>
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<td>12:15</td>
<td>ECSS2019-27</td>
<td>Low-Level Winds in Tornadoes</td>
<td>Kosiba, Karen; Wurman, Josh</td>
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<td>12:30</td>
<td>ECSS2019-182</td>
<td>Spring 2019 above-ground thermodynamic observations in convective storms from balloon-borne probes acting as pseudo-Lagrangian drifters</td>
<td>Bartos, Elissa; Markowski, Paul; Richardson, Yvette</td>
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<td>12:45</td>
<td>ECSS2019-154</td>
<td>Tornado Outbreaks from Quasi-Linear Convective Systems in the United Kingdom: Synoptic-Scale Environments and Along-Line Variability</td>
<td>Buckingham, Ty; Schultz, David</td>
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**Location:** Room Attic
Tuesday’s posters

Location: Poster area

Attendance time: 14:30–16:00

Session 1
Convective storm and tornado dynamics

P1: ECSS2019-38
A study of a tornado event in Basque Country: the 4th July 2018 case.
Gaztelumendi, Santiago; Egaña, Joseba; Aranda, Jose Antonio

P2: ECSS2019-71
Tornadoes regions in Poland - meteorological conditions and spatial and temporal distribution
Walczakiewicz, Szymon

P3: ECSS2019-91
A Demonstration of the Effect of Vertical Wind Shear and the Perturbation Pressure Fields on Simulated Thunderstorms
Kretschmer, Morten; Dahl, Johannes

P4: ECSS2019-129
A Numerical Study on a Tornado that Formed in a Quasi Linear Convective System over Kanto plain in Japan
Tochimoto, Eigo; Niino, Hiroshi

P5: ECSS2019-181
3-D structure of non-supercell tornado at initial stage
Sassa, Koji; Nagano, Haruna

P6: ECSS2019-204
Idealized testing of the sensitivity of mesovortices to low-level CAPE variations
Gatzen, Christoph; Schielicke, Lisa

P7: ECSS2019-208
Vortex identification in simulated supercells: a comparison of methods
Schielicke, Lisa; Dahl, Johannes

END OF POSTER PROGRAMME SESSION 1

Session 3
Impact of storms on society, impact mitigation and early warning systems

P8: ECSS2019-8
The call of the clouds. High weather involvement in Austria.
Keul, Alexander; Krennert, Thomas; Kaltenberger, Rainer

P9: ECSS2019-12
The regional risk perception of extreme weather events in Germany
Mohr, Susanna; Döring, Martin; Feser,Frauke; Kunz, Michael; Kunz-Plapp, Tina; Ratter, Beate; Schwarze, Reimund

P10: ECSS2019-123
Improving the prediction of flash floods - New and user-oriented approaches under development at DWD
Keller, Julia; Blahak, Ulrich; Hagedorn, Renate; Akansu, Elisa; Rempel, Martin

P11: ECSS2019-125
Multihazard Weather Risk Perception and Preparedness: Results from the India Severe Weather Survey
Sharma, Sanjay; Keul, Alexander; Brunner, Bernhard; Longkumer, Imolemba; Biswasharma, Rupraj; Roy, Partha; Samanta, Debajyoti

END OF POSTER PROGRAMME SESSION 3

Session 7
Convective storms within extratropical, Mediterranean and tropical cyclones & Floods and flash floods

P12: ECSS2019-33
Satellite-based study and numerical simulation of mesoscale convective systems with tornadoes in Russia for 2017-2018
Shikhov, Andrey; Chernokulsky, Alexander; Sprygin, Alexander; Bykov, Alexey; Azhigov, Igor

P13: ECSS2019-36
Analysis of convective clouds characteristics by FY-4A data
Liu, Jian; Jiang, Jianyin; Liu, Hui

P14: ECSS2019-53
Storm Environment Studies with IASI L2 Data
Kocsis, Zsófia; Simon, André; Csirmaz, Kálmán; Putsay, Mária; August, Thomas

P15: ECSS2019-81
Tobac - a Lagrangian framework for object-based analysis of clouds
Senf, Fabian; Heikenfeld, Max; Watson-Parris, Duncan; Christensen, Matthew; Stier, Philip

P16: ECSS2019-112
Temporal characteristics of cloud tops during storm evolution
Štastka, Jindřich

P17: ECSS2019-124
Current Status of Convective Clouds Discrimination from GK-2A
Park, Ki-Hong; Ryu, Geun-Hyeok; Lee, Ho-Yeon; Jang, Jae-Dong
**Session 8**

Radar studies of storms and their environment

**P22: ECSS2019-5**
Severe Storms in the Lake Victoria Basin
*Goodman, Steven; Virts, Katrina; Roberts, Rita; Wilson, Jim; Petersen, Ralph; Cronce, Lee; Hartley, Andrew; Chang’a, Ladislaus*

**P23: ECSS2019-17**
ZDR-Column Detection in Switzerland
*von Matt, Christoph; Barras, Hélène; Boscacci, Marco; Figueras i Ventura, Jordi; Hering, Alessandro; Gabella, Marco; Martius, Olivia; German, Urs*

**P24: ECSS2019-22**
Developing Method to monitor Strong Wind Associated with Downburst and Gust-front Using Doppler Radar for Railways Operation
*Takami, Kazuya; Fukuhara, Takaaki; Araki, Keiji*

**P25: ECSS2019-35**
Characteristics of QLCS Downdrafts and Environments Observed during the VORTEX-Southeast Project
*Marquis, James; Kosiba, Karen; Wurman, Josh*

**P26: ECSS2019-51**
Mesocyclone detection at Météo-France
*Besic, Nikola; Augros, Clotilde; Gaussian, Nicolas; Imbert, Jean; Kreitz, Michaël; Le Bastard, Tony*

**P27: ECSS2019-60**
Real-time recognition of surface precipitation type (SPT) for high resolution precipitation data
*Jurczyk, Anna; Sztorc, Jan; Ośródka, Katarzyna; Wyszogrodzki, Andrzej; Kolendowicz, Leszek*

**Session 9**

Storm microphysics, electrification, lightning and hail

**P34: ECSS2019-10**
Lightning Potential Index in the Czech Republic during convective events of summer 2018 using COSMO NWP model
*Sokol, Zbyněk; Minářová, Jana; Uhlířová, Iva*

**P35: ECSS2019-11**
Hydrometeor distribution within convective events producing lightning using cloud profiler data of summer 2018
*Minářová, Jana; Sokol, Zbyněk*

**P36: ECSS2019-61**
Capabilities of Eulerian based lightning jump algorithm
*Jelić, Damjan; Telšišman Prtenjak, Maja; Skok, Gregor*

**P37: ECSS2019-68**
Radar detection of hail in Czechia using single- and/or dual-polarization data
*Skripiňková, Kateřina; Režačková, Daniela*

**P38: ECSS2019-116**
Determination of movement vectors field for scale-dependent precipitation layers: case study
*Giszterowicz, Mateusz; Kurcz, Agnieszka*
P39: ECSS2019-144
A multi sensor study of electrical, lightening and microphysical properties of thunderstorms over the north-eastern and eastern part of India
Sharma, Sanjay; Biswasharma, Rupraj; Longkumer, Imolemba; Roy, Partha; Samanta, Debajyoti; Pramanik, Gour Pramanik

P40: ECSS2019-188
Quantifying Hail Size Distributions from the Sky: Application of Drone Aerial Photogrammetry to an Argentinian Hail Storm
Soderholm, Joshua; Kumjian, Matthew; McCarthy, Nicholas; Maldonado, Paula

END OF POSTER PROGRAMME SESSION 9

Session 11
Collection of storm data, historical events and damage assessments

P41: ECSS2019-18
A GIS dataset of windthrow events in the European Russia and Ural regions for 1986-2017
Shikhov, Andrey; Chernokulsky, Alexander; Azhigov, Igor

P42: ECSS2019-24
Exceptional bura case at the end of February 2019
Renko, Tanja; Strelec Mahovic, Nataša; Mikus Jurkovic, Petra

P43: ECSS2019-37
A study of severe storms in Basque Country: the 3rd June 2018 case. Egaña, Joseba; Gaztelumendi, Santiago

P44: ECSS2019-46
Tornadoes in Portugal overview. Leitao, Paula

P45: ECSS2019-56
Using >60’000 crowd-sourced hail reports for the verification of radar based hail products
Barras, Hélène; Hering, Alessandro; Martynov, Andrey; Notl, Pascal-Andreas; Germann, Urs; Martius, Olivia

P46: ECSS2019-64
Cooperation between National meteorological service and amateur meteorological associations in the Czech republic.
Tomší, Radek; Prouza, Tomáš; Duspara, Robin

P47: ECSS2019-66
Verification of reconstructed historical extreme precipitation events in an hourly resolution
Blžňák, Vojtěch; Kašpar, Marek; Müller, Miloslav; Zacharov, Petr

P48: ECSS2019-72
A comparison of predictability of historical heavy precipitation events. Zacharov, Petr; Kaspar, Marek

P49: ECSS2019-83
Identification of tornado tracks in Russian forests based on combining of Meteosat-8 and Sentinel-2 satellite images
Shikhov, Andrey; Azhigov, Igor

P50: ECSS2019-107
Case Study of Multiple Low Topped Supercell Tornadoes in SW Iberia. March 4, 2018
Soriano Romero, Juan de Dios; Gutiérrez Rubio, Delia

P51: ECSS2019-127
Determination of storm precipitation zones based on radar data on the example of the city of Kraków
Pyrz, Robert

P52: ECSS2019-134
Forensic meteorology. A field survey methodology proposal for wind assessment
Gutiérrez Rubio, Delia; Soriano, Juan de Dios; Bech, Joan; Rodriguez, Oriol; Castán, Salvador

P53: ECSS2019-138
Weather-related fatalities in Poland
Pilorz, Wojciech; Surowiecki, Artur

P54: ECSS2019-143
The 1984 Ivanovo tornado outbreak: diagnosis and modelling
Chernokulsky, Alexander; Vazaeva, Natalia; Shikhov, Andrey

P55: ECSS2019-195
Information on severe storms in newspapers from the 19th century
Cheval, Sorin; Haliuc, Aritina; Antonescu, Bogdan; Tiţcovschi, Adrian; Dobre, Mihaela; Tătui, Florin; Dumitrescu, Alexandru; Manea, Ancuta; Tudorache, George; Irimescu, Anişoara; Bira, Manius-Victor

P57: ECSS2019-212
The International Fujita Scale: A Globally Applicable Scale for Tornado and Wind Damage Classification
Groenemeijer, Pieter; Holzer, Alois M.; Hubrig, Martin; Kühne, Thilo; Kaltenberger, Rainer; Soriano, Juan de Dios; Bock, Lothar; Gutiérrez Rubio, Délia; van de Ploeg, Bas; Strommer, Gabriel; Schreiner, Thomas

END OF POSTER PROGRAMME SESSION 11

Session 12
Additional posters (Tuesday)

P58: ECSS2019-221
Radar-based mesocyclone detection and tracking in alpine regions
Feldmann, Monika

P59: ECSS2019-222
Deep Learning for forecasting Thunderstorms on NE Italy
Manzato, Agostino; Horton, Pascal; Dovier, Agostino; Serra, Giuseppe; Foschiani, Luca; Soldà, Davide

P60: ECSS2019-223
KraK - a dedicated group at MET Norway on deep convection
M. Gulbrandsen, Sevim; Pedersen, Nina H.; Sarchosidis, Charalampos

END OF POSTER PROGRAMME SESSION 12
Wednesday, 6 November 2019

Location: Lecture room

09:00–10:45

Session 7
Satellite studies of storms and their environment

09:00–09:15: ECSS2019-186
A Unified Theory of Storm Top Dynamics and Its Verification
Wang, Pao K.

09:15–09:30: ECSS2019-31
A satellite perspective on interactions between convective storms and the upper atmosphere
Setvak, Martin; Calbet, Xavier; Miller, Steven

09:30–09:45: ECSS2019-109
The Meteosat Third Generation satellite mission and its future contribution to the monitoring of convective storms
Niitosvaara, Vesa; Bojinski, Stephan; Grandell, Jochen

09:45–10:00: ECSS2019-187
Satellite observations of deep convection during Mediterranean Hurricanes
Dafis, Stavros; Claud, Chantal; Kotroni, Vassiliki; Lagouvardos, Konstantinos; Rysman, Jean-François

10:00–10:15: ECSS2019-1
Detection of Storm-Scale Rotation from Geostationary Satellite
Lindsey, Dan

10:15–10:30: ECSS2019-82
Convective cloud analysis with use of medium and high resolution radiometers - simulation of MTG/FCI and EPS-SG/MetImage RGBs*
Struzik, Piotr; Pajek, Monika

10:30–10:45: ECSS2019-197
Evaluating the use of temperature and humidity profiles from the IASI hyperspectral sounder for severe storm forecasting at the ESSL Testbed
Groenemeijer, Pieter; Půčk, Tomáš; August, Thomas

10:40 Coffee break

11:30–13:00

Session 5
Forecasting and nowcasting of storms

11:30–11:45: ECSS2019-76
Combining ensembles of NWP and observation-based nowcasting at DWD to improve convective precipitation forecasts
Rempel, Martin

11:45–12:00: ECSS2019-43
Using Near-Ground Storm Relative Helicity in Tornado Forecasting
Coffen, Brice; Parker, Matthew; Thompson, Richard; Smith, Bryan

12:00–12:15: ECSS2019-161
Combination of object-based probabilistic Nowcasting and NWP-Ensemble
Posada Navia-Osorio, Rafael; Feger, Robert; Schultz, Markus; Wapler, Kathrin; Werner, Manuel

12:15–12:30: ECSS2019-184
Using machine learning to advance next-day probabilistic convective hazard prediction with convection-allowing models: Initial results and future plans
Sobash, Ryan; Schwartz, Craig; Gagne, David; Romine, Glen

12:30–12:45: ECSS2019-165
A novel multi-sensor nowcast algorithm of thunderstorm intensity using machine learning
Hamann, Ulrich; Zeder, Joel; Barras, Hélène; Clementi, Lorenzo; Foresti, Loris; Hering, Alessandro M.; Nath, Shru; Nerini, Daniele; Nisi, Luca; Sass, Marco; Germann, Urs

12:45–13:00: ECSS2019-54
Improving hail nowcasting by combining crowd-sourced hail reports with machine learning
Barras, Hélène; Hamann, Ulrich; Foresti, Loris; Hering, Alessandro; Nerini, Daniele; Zeder, Joel; Germann, Urs; Martius, Olivia

ORAL PROGRAMME SESSION 5 CONTINUES ON THURSDAY

13:00–14:30 Lunch break

14:30–23:00 Sponsored Social Programme

D
Excursion to the Wieliczka Salt Mine

14:30–19:00
Bus transfer to Wieliczka Salt Mine and guided tour.

E
Conference dinner

20:00–23:00
Location: Restaurant Avangarda

Address: Mikolaja Zyblikiewicza 1, 31-029 Kraków

(located east of city centre close to Westerplatte main road, about 10 to 15 minutes by foot from ECSS venue)
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00–09:15</td>
<td>Session 5</td>
<td>Forecasting and nowcasting of storms</td>
<td></td>
<td>Lecture room</td>
</tr>
<tr>
<td>09:00–09:15</td>
<td>ECSS2019-170</td>
<td>What is the intrinsic predictability of supercell storms?</td>
<td>Markowski, Paul</td>
<td></td>
</tr>
<tr>
<td>09:15–09:30</td>
<td>ECSS2019-167</td>
<td>The 2019 NOAA/Hazardous Weather Testbed Spring Forecasting Experiment</td>
<td>Gallo, Burkey; Clark, Adam; Jirak, Israel; Knopfmeier, Kent; Roberts, Brett and the Spring Forecasting Experiment Team</td>
<td></td>
</tr>
<tr>
<td>09:30–09:45</td>
<td>ECSS2019-114</td>
<td>Severe weather patterns of a tornadic event associated to a squall line in the western Mediterranean region</td>
<td>Pineda, Nicolau; Altube, Patricia; Rigo, Tomeu; Farnell, Carme; Montanyá, Joan; van der Velde, Oscar; Salvador, Albert; Bech, Joan; Rodriguez, Oriol</td>
<td></td>
</tr>
<tr>
<td>09:45–10:00</td>
<td>ECSS2019-15</td>
<td>Forecasting lightning with ECMWF's IFS</td>
<td>Tsonovský, Ivan; Lopez, Philippe</td>
<td></td>
</tr>
<tr>
<td>10:00–10:15</td>
<td>ECSS2019-2</td>
<td>Predicting tornado count distributions by damage rating</td>
<td>Elsner, James; Schroder, Zoe</td>
<td></td>
</tr>
<tr>
<td>10:15–10:30</td>
<td>ECSS2019-119</td>
<td>Classification, environments and impact of the most severe thunderstorms over Poland in last decade</td>
<td>Poręba, Szymon; Barczyk, Mateusz</td>
<td>Lecture room</td>
</tr>
<tr>
<td>10:30–10:45</td>
<td>ECSS2019-215</td>
<td>A prototype real-time sting jet precursor tool for forecasters</td>
<td>Martinez-Alvarado, Oscar; Gray, Suzanne L.; Suri, Dan; Ackerly, Duncan</td>
<td>Lecture room</td>
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<tr>
<td>10:45 Coffee break</td>
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<tr>
<td>11:30–11:45</td>
<td>ECSS2019-118</td>
<td>TAF verification - improvements of the thunderstorm forecasts at Croatian airports</td>
<td>Jurković, Jadran; Šoljan, Vinko; Pasarić, Zoran; Kos, Igor</td>
<td></td>
</tr>
<tr>
<td>11:45–12:00</td>
<td>ECSS2019-176</td>
<td>SEEMET - South-Eastern Europe Training Initiative</td>
<td>Strelec Mahović, Nataša; Mikuš Jurković, Petra; Blašković, Marko; Renko, Tanja</td>
<td></td>
</tr>
<tr>
<td>12:00–12:15</td>
<td>ECSS2019-115</td>
<td>Verification of heavy rain warning in Catalonia</td>
<td>Gallego, Sergio; Alvarez, Manuel; Batalla, Esther; Brucet, Clara; Farnell, Carme; Flores, Abel; Segala, Santi; Aran, Montse</td>
<td></td>
</tr>
<tr>
<td>12:30–12:45</td>
<td>ECSS2019-192</td>
<td>Study of strong tornadoes in Germany: Various aspects of Forecasting and Nowcasting</td>
<td>Beyer, Marcus; Wapler, Kathrin</td>
<td>Lecture room</td>
</tr>
<tr>
<td>12:45–13:00</td>
<td>ECSS2019-41</td>
<td>From Short Fuse Warnings to Long Range Forecasts: The Role of the Meteorologist in Global Weather Industry</td>
<td>Roys, Tyler</td>
<td>Lecture room</td>
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<tr>
<td>13:00 Lunch break</td>
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<tr>
<td>14:30–15:45</td>
<td></td>
<td>CWG splinter meeting</td>
<td>By invitation.</td>
<td>Room Attic</td>
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<tr>
<td>16:45–18:15</td>
<td>Session 2</td>
<td>Numerical modelling of storms, storm-scale data assimilation</td>
<td></td>
<td>Lecture room</td>
</tr>
<tr>
<td>16:45–17:00</td>
<td>ECSS2019-45</td>
<td>Novel analysis techniques for identifying systematic differences between convection-allowing model forecasts</td>
<td>Potvin, Corey; Skinner, Patrick; Clark, Adam; Wicker, Louis; Carley, Jacob; Reinhardt, Anthony; Jones, Thomas; Yussouf, Nusrat; Knopfmeier, Kent</td>
<td></td>
</tr>
<tr>
<td>17:00–17:15</td>
<td>ECSS2019-173</td>
<td>The role of cloud microphysics and model grid resolution in the development of severe convective events.</td>
<td>Wyszogrodzki, Andrzej A.</td>
<td></td>
</tr>
<tr>
<td>17:15–17:30</td>
<td>ECSS2019-104</td>
<td>Assimilation of 3D radar data and derived objects on the convective scale with an ensemble-based data assimilation system</td>
<td>Welzbacher, Christian; Bauernschubert, Elisabeth; Blahak, Ulrich; Feger, Robert; Khosravian, Kobra; de Lozar, Alberto; Potthast, Roland; Schraff, Christoph; Stephan, Klaus; Werner, Manuel</td>
<td></td>
</tr>
<tr>
<td>17:30–17:45</td>
<td>ECSS2019-96</td>
<td>Entrainment in Supercells</td>
<td>Jo, Enoch; Lasher-Trapp, Sonia</td>
<td></td>
</tr>
</tbody>
</table>
17:45–18:00: ECSS2019-131
Exploring the potential of assimilating three-dimensional lightning discharge observations with an ensemble Kalman filter
Honda, Takumi; Sato, Yousuke; Miyoshi, Takemasa

18:00–18:15: ECSS2019-55
Comparison of Simulated Polarimetric Signatures Using ICE3 and LIMA Microphysics Schemes in Meso-NH
Parisotto Sinhori, Natalia; Augros, Clotilde; Caumont, Olivier

END OF ORAL PROGRAMME SESSION 2

18:30–19:30  Location: Room Attic
G
CM1 model introduction
by Dr. George H. Bryan from NCAR, Boulder, USA

Thursday’s posters
Location: Poster area
Attendance time: 14:30–16:00

Session 2
Numerical modelling of storms, storm-scale data assimilation

P1: ECSS2019-34
Study and forecast of convection phenomena over the territory of the south of Russia using lightning location data network
Gubenko, Inna

P2: ECSS2019-62
Convective dust storms during Saharan dust outbreak on Northern Adriatic
Mifka, Boris; Telišman Prtenjak, Maja

P3: ECSS2019-65
Analysis of the WRF-HAILCAST model applied to the Croatian area
Malečić, Barbara; Ćorko, Karol; Jelić, Damjan; Horvath, Kristian; Strelec Mahović, Nataša; Mikuš Jurković, Petra; Telišman Prtenjak, Maja

P4: ECSS2019-78
High-resolution simulation of an isolated tornadic supercell in Poland on 20 June 2016
Pilguj, Natalia; Taszarek, Mateusz; Pajurek, Łukasz; Kryza, Maciej

P5: ECSS2019-85
Updated analysis of nocturnal convection initiation using convective-scale data assimilation of observations collected during PECAN
Marquis, James; Wurman, Josh; Romine, Glen

P6: ECSS2019-103
A step towards dynamic forecast and monitoring of severe storms and cloudbursts in Higher Himalayas
Dhar, Tanmay

P7: ECSS2019-113
Numerical Modeling of a Masurian Lake District Severe Convective System from 21 August 2007
Wójcik, Damian K.; Ziemiański, Michał Z.; Grabowski, Wojciech W.

P8: ECSS2019-130
Understanding of Convection Genesis by Urban Meteorological Model Based on Large Eddy Simulation (withdrawn)
Yamaguchi, Kosei; Tsuchihashi, Tomohiro; Konishi, Dai; Nakakita, Eiichi

P9: ECSS2019-147
Massive parameter-sweep warm bubble experiment on convective cloud environment
Sueki, Kenta

P10: ECSS2019-149
Evaluation of heavily-precipitating storm-scale simulations with different microphysical schemes using observations from radar and SEVIRI visible channels
de Lozar, Alberto; Blahak, Ulrich; Seifert, Axel

P12: ECSS2019-193
Impact of terrain on supercells according to idealized simulations with actual terrain
Bryan, George

P13: ECSS2019-213
On the importance of the atmospheric-ocean feedback mechanisms in the Mediterranean storms
Stathopoulos, Christos; Patlakas, Platón; Tsalis, Christos; Kallos, George

END OF POSTER PROGRAMME SESSION 2

Session 5
Forecasting and nowcasting of storms

P14: ECSS2019-3
Numerical forecast of lightning probability over Bulgaria
Markova, Boryana; Tsenova, Boryana; Bogatchev, Andrey

P15: ECSS2019-6
The derecho episode in the Bory Tucholskie district 11 August 2017 - the present state of the predicting severe storms by awiacja_imgw_pl
Barański, Piotr

P16: ECSS2019-9
Predicting tornado frequency using environmental factors on big convective days in the United States
Schroder, Zoe; Elsner, James

P17: ECSS2019-14
Development of a probabilistic precipitation-nowcasting approach at DWD
Schulze, Markus; Rempel, Martin; Werner, Manuel; Blahak, Ulrich
P18: ECSS2019-16
Severe Storm Predictors - Capabilities of Remote Sensing in Central Europe
Valachova, Michaela; Benacek, Patrik; Kyznarova, Hana

P19: ECSS2019-19
Analysis and nowcasting of the thunderstorm life-cycle based on multiple high resolution data sources.
Zobisch, Isabella; Forster, Caroline; Zinner, Tobias; Wapler, Kathrin

P20: ECSS2019-20
Life cycle analysis of convective cells for Nowcasting purposes in consideration of atmospheric environment conditions
Wilhelm, Jannik; Blahak, Ulrich; Wapler, Kathrin; Potthast, Roland; Kurz, Michael

P21: ECSS2019-29
Numerical modelling and observational analysis of the characteristics of an intense thunderstorm over Northern Greece
Tegoulias, Ioannis

P22: ECSS2019-39
Evaluation of the potential use of lightning features as a storm severity indicator in Basque Country.
Gaztelumendi, Santiago; Egaña, Joseba

P23: ECSS2019-69
Object-based verification of radar reflectivities on the convective scale
Hoff, Michael; De Lozar, Alberto; Feger, Robert; Posada, Rafael; Junk, Markus

P24: ECSS2019-49
Hail (hail) alleys at the Danubian Plain in Bulgaria.
Zamfirov, Ivalio; Manafov, Ilian; Penchev, Rosen; Georgiev, Georgi

P25: ECSS2019-52
Satellite observed properties of isolated convective storms during their growth phase
Lenk, Stephan; Senf, Fabian; Deneko, Hartwig

P26: ECSS2019-57
Ensemble Forecasting of Extreme Convective Phenomena Using Universal Tornadic Index
Mazur, Andrzej; Duniec, Grzegorz; Interewicz, Witold; Wyszogrodzki, Andrzej

P27: ECSS2019-70
Verification of the QPF for severe local storms vs heavy stratiform rains
Zacharov, Petr; Rezacova, Daniela

P28: ECSS2019-90
EnSOMble Forecasting: Leveraging Self-Organizing Maps for Tornado Threat Modeling
Gallo, Burkely; Anderson-Frey, Alexandra; Flora, Monte

P29: ECSS2019-93
Recent and future training developments related to severe weather forecasting in EUMeTrain
Kocsis, Zsofia

P30: ECSS2019-97
Characteristics of the linearly organized convective systems over Croatia
Strelec Mahovic, Natasa; Mikus Jurkovic, Petra; Lovric, Branimir; Soljan, Vinko; Renko, Tanja

P31: ECSS2019-99
The Nature and Variability of Ensemble Sensitivity Fields that Diagnose Severe Convection
Ansell, Brian; Coleman, Austin

P32: ECSS2019-102
Storm observation system with 4-D weather database
Lialuskin, Aleksandr; Zamorin, Igor; Bazlova, Tatiana; Bochamnikov, Nikolai; Solonin, Aleksandr

P33: ECSS2019-108
Detection of tornadic vortex from Doppler velocity field using Convolutional Neural Networks
Ishitsu, Naoki; Kusunoki, Kenichi; Adachi, Toru; Arai, Ken-ichiro; Inoue, Hanako; Fijiwara, Chusei; Suzuki, Hiroto

P34: ECSS2019-117
High-resolution numerical models for forecasting a severe wet microburst over central Italy
Pasi, Francesco; Capecci, Valerio; Messeri, Gianni; Melani, Samantha; Antonini, Andrea; Ortolani, Alberto; Gozzini, Bernardo

P36: ECSS2019-120
An advanced system for automatic strong gust detection and warning for railroads using deep learning - current progress and future plans
Kusunoki, Kenichi; Ishitsu, Naoki; Adachi, Toru; Arai, Ken-ichiro; Inoue, Hanako; Fijiwara, Chusei; Suzuki, Hiroto

P37: ECSS2019-128
An early severe weather warning system in the Meteorological Service of Catalonia
Figueroa, Francesc; Aran, Montse; Farnell, Carme; Mateo, Jordi; Rigo, Tomeu; Segala, Santi

P38: ECSS2019-136
Pedagogical input of idealized numerical simulations performed by Meso-NH model in order to illustrate and understand the complex processes associated with deep and moist convection
Kreitz, Michal; Pollack, David; Gueguen, Claudine; Mahenc, Jeanne; Sterle, Amelie; Clotilde, Laure; Chassagnou, Anne-Sophie; Quet, Quentin

P39: ECSS2019-139
Diagnoses of severe convection during the cold season in France
Kreitz, Michał; Boisserie, Marie; Forster, Arnaud; Paillard, Michał; Tessiot, Octave

P40: ECSS2019-157
Storm-Scale Ensemble Forecasting during NOAA 2019 HWT using FV3 with Multiple Physics
Kong, Fanyou; Xue, Ming; Supinie, Tim; Zhang, Chunxi; Brewster, Keith

P41: ECSS2019-164
Forecast Parameters for US Hail Occurrence and Size
Allen, John; Kumjian, Matthew; Jewell, Ryan; Smith, Bryan; Thompson, Rich
P42: ECSS2019-166  
Towards automated multi-sensor thunderstorm warning suggestions  
Nath, Shruti; Barras, Hélène; Clementi, Lorenzo; Foresti, Loris; Hamann, Ulrich; Hering, Alessandro M.; Nerini, Daniele; Nisi, Luca; Sassi, Marco; Zeder, Joel; Germann, Urs

P43: ECSS2019-171  
Generation of an Object-based Nowcasting Ensemble  
Feger, Robert; Werner, Manuel; Posada, Rafael; Walper, Kathrin; Blahak, Ulrich

P44: ECSS2019-172  
Exploring potential predictor variables by means of genetic algorithms for thunderstorms forecasting with analog methods  
Horton, Pascal; Manzato, Agostino; Soldà, Davide; Martius, Olivia

P45: ECSS2019-194  
Assessment of WRF model convection schemes for the prediction of convective storms over the United Arab Emirates  
Tilev, Seyda; Ajaji, Radi

P46: ECSS2019-206  
Modifications to severe convective storm ingredients in the Alpine forelands for cases of strong and weak synoptic-scale flow.  
Pucik, Tomas; Zacharov, Petr; Groenemeijer, Pieter

P47: ECSS2019-216  
Challenging forecast of a mesocyclonic tornado on 3rd October 2018 in Slovakia  
Šinger, Miroslav

P48: ECSS2019-217  
Use of convection-allowing model ensembles in forecasting severe convective hazards in Australia  
Richter, Harald; Sgarbossa, Dean

END OF POSTER PROGRAMME SESSION 5

Session 10  
Storm climatology, risk assessments and relation to climate change

P49: ECSS2019-7  
Probabilistic modeling of European severe convective storm risk - from research to insurance application  
Lai, Michèle; Dobbin, Alison; Haines, Philip; Hill, Marc; Grieser, Juergen

P50: ECSS2019-40  
A nine-year climatology of thunderstorm days and lightning characteristics in Basque Country  
Gaztelumendi, Santiago; Egaña, Joseba; Aranda, Jose Antonio

P51: ECSS2019-44  
Bayesian modeling of central U.S. tornado reporting rates  
Potvin, Corey; Broyles, Chris; Skinner, Patrick; Brooks, Harold; Rasmussen, Erik

P52: ECSS2019-48  
Increase of the largest hailstone diameter with melting level rise  
Berthet, Claude; Dessens, Jean; Sanchez, Jose Luis; Merino, Andres

P53: ECSS2019-73  
Climatological and meteorological aspects of very large hail and tornados in Lithuania in the period 1962-2018  
Marcinoniene, Izolda

P54: ECSS2019-74  
LNS as a new tool for severe weather detection in relation to climatic studies  
Kryvoshein, Oleksandr

P55: ECSS2019-79  
Mid-tropospheric patterns and historic tornado outbreaks.  
Cwik, Paulina; McPherson, Renee; Brooks, Harold; Richman, Michael

P56: ECSS2019-80  
Hazardous weather for aviation in Europe: climatological estimates based on ERA5 reanalysis  
Taszarek, Mateusz; Kendzierski, Sebastian; Pilgij, Natalia

P57: ECSS2019-111  
A Hail Storm Climatology for Switzerland  
Schroer, Katharina; Trefalt, Simon; Schweizer, Cornelia; Hering, Alessandro; Germann, Urs; Nisi, Luca

P58: ECSS2019-126  
Preliminary climatology of derechos in Czechia  
Rýva, David

P59: ECSS2019-133  
A 15 years climatology of storm tracks by analysis of Vertical Maximum Intensities over north-eastern Italy  
Pucillo, Arturo

P60: ECSS2019-140  
Observed redistribution of precipitation types toward more heavy showers in Northern Eurasia  
Chernokulsky, Alexander; Kozlov, Fedor; Zolina, Olga; Semenov, Vladimir

P61: ECSS2019-75  
A Climatology of Thunderstorms across Europe from a Synthesis of Multiple Data Sources  
Taszarek, Mateusz; Allen, John; Půčík, Tomáš; Groenemeijer, Pieter; Czernecki, Bartosz; Kolendowicz, Leszek; Lagouvardos, Kostas; Kotroni, Vasiliki; Schulz, Wolfgang

P62: ECSS2019-152  
A 10-year climatology of Mesoscale Convective Systems in Poland based on radar and lightning data  
Surowiecki, Artur; Taszarek, Mateusz

P63: ECSS2019-153  
Study of upper air conditions in tornadic and waterspout events in the Iberian Peninsula and Balearic Islands using ERA5 reanalysis data  
Rodriguez, Oriol; Bech, Joan

P64: ECSS2019-162  
Thunderstorm and hail occurrence in Kraków (1885-2018)  
Bielec-Bakowska, Zuzanna
P65: ECSS2019-169
Thunderstorm favorable conditions over Poland (1951-2018)
Ustrnul, Zbigniew; Wypych, Agnieszka; Bochenek, Bogdan

P66: ECSS2019-174
Moisture Attribution and Sensitivity Analysis of a Winter Tornado Outbreak
Molina, Maria; Allen, John

P67: ECSS2019-177
Environmental controls on the climatological scaling of tornado frequency with intensity
Tippett, Michael; Lepore, Chiara

P68: ECSS2019-180
Understanding Climate Controls of Severe Local Storm Environments over North America
Reed, Kevin; Chavas, Daniel; Li, Funing

P69: ECSS2019-196
Estimating changes in high-end hail losses in Europe using a hail event set
Castellano, Christopher; Groenemeijer, Pieter; Rädler, Anja T.; Půčík, Tomáš; Faust, Eberhard

P70: ECSS2019-201
Season-long sensitivity studies on the role of soil moisture for convective precipitation
Pistotnik, Georg; Schneider, Stefan

P71: ECSS2019-202
Analysis of 10 severe convective storm cases over Kars and surroundings, Turkey
Kivrak, Berna; Kahraman, Abdullah

P72: ECSS2019-207
An updated climatology of severe convective wind events in Europe
Gatzen, Christoph; Taszarek, Mateusz; Surowiecki, Artur; Schielicke, Lisa

P73: ECSS2019-214
Significant tornado and strong waterspout climatology of Greece
Sioutas, Michalis; Doe, Robert K.

P74: ECSS2019-218
Assessing extreme wind speeds at return intervals of 20 years and 50 years from the USAF data set
Kettle, Anthony

END OF POSTER PROGRAMME SESSION 10
Friday, 8 November 2019

Location: Lecture room

09:00–13:00

Session 10
Storm climatology, risk assessments and relation to climate change

09:00–09:30: ECSS2019-25
Investigating Possible Future Changes in Hailfall Occurrence and Intensity Using a Pseudo-Global Warming Approach (solicited)
Lashern-Trapp, Sonia; Trapp, Robert

09:30–09:45: ECSS2019-87
Probabilistic Hail Hazard Assessment
Smit, Ansie; Dyson, Liesl; Kijko, Andrzej

09:45–10:00: ECSS2019-121
Hail climatology and risk assessment combining satellite, radar and climate model data
Punge, Heinz Jürgen; Bedka, Kristopher M.; Kunz, Michael

10:00–10:15: ECSS2019-190
Large hail impacts and hail-related financial losses across Europe
Pucik, Tomas; Groenemeijer, Pieter; Castellano, Christopher; Rädler, Anja; Kühne, Thilo; Faust, Eberhard

Seasonal and diurnal changes of thunderstorm activity in Poland
Jaczewski, Adam

10:30–10:45: ECSS2019-105
Kılıç, Özgenur; Kahraman, Abdullah

11:00 Coffee break

11:30–11:45: ECSS2019-98
The Global Distribution of Hail and Tornado Environments
Allen, John; Lepore, Chiara

11:45–12:00: ECSS2019-26
High-Shear/Low-CAPE Environments in Reanalysis Data
Brooks, Harold; Battaglioli, Francesco; Croad, Hannah; Cumming, Ryan; Martin, Elinor

12:00–12:15: ECSS2019-95
U.S. Tornado Fatalities: Environmental, Seasonal, and Geographical Perspectives
Anderson-Frey, Alexandra; Brooks, Harold

Severe convective storms in Europe and their relation to large-scale mechanisms
Mohr, Susanna; Kunz, Michael; Piper, David; Wandel, Jan; Martius, Olivia

12:30–12:45: ECSS2019-145
Long-term changes in thunderstorm environments over Europe and United States as the response to a globally warming climate
Taszarek, Mateusz; Czernecki, Bartosz; Brooks, Harold; Allen, John; Pilguj, Natalia

12:45–13:00: ECSS2019-205
Estimating the risk exposed areas and the return periods of Medicanes
Patlakas, Platon; Stathopoulos, Christos; Tsalis, Christos; Kallos, George

13:00–13:30

H
Closing and Awards Session
The ECSS is kindly supported by

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NATIONAL RESEARCH INSTITUTE