# 9<sup>th</sup> European Conference on Severe Storms

# Pula, Croatia

18 – 22 September 2017

# Programme



**European Conference on Severe Storms** 

# Sunday, 17 September 2017

Location: Conference Lobby

15:00-21:00

# On site registration.

Monday, 18 September 2017

Location: Room Ulika

09:00-09:30

# A Opening

09:30-10:45

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

### 09:30-09:45: ECSS2017-1

The Behavior and Characteristics of Squall Lines within Coastal Environments Lombardo, Kelly; Kading, Tristan

### 09:45-10:00: ECSS2017-60

High-resolution ensemble data assimilation of a medicane event: challenges and beneffits **Homar Santaner, Victor**; Carrió Carrió, Diego; Stensrud, David

10:00–10:15: ECSS2017-94 Supercell predictability studies in support of NOAA Warn-on-Forecast Potvin, Corey; Flora, Montgomery; Murillo, Elisa; Wicker, Louis

### **10:15–10:30: ECSS2017-113** Ensemble-based storm-scale analysis and prediction of severe convection: Assimilation of radar reflectivity **de Lozar, Alberto**; Blahak, Ulrich; Seifert, Axel

### 10:30-10:45: ECSS2017-146

Correcting Storm Displacement Errors in Ensembles Using Feature Calibration and Alignment (FCA) **Stratman, Derek**; Potvin, Corey; Wicker, Louis

### 10:45 Coffee break

### 11:30–11:45: ECSS2017-40 Simulations of devastating tornadoes embedded within supercell thunderstorms Orf, Leigh

### 11:45-12:00: ECSS2017-181

Towards real-time high-resolution precipitation forecasts for the city of Rotterdam **Banks, Robert**; Basu, Sukanta; Schleiss, Marc;

Banks, Robert; Basu, Sukanta; Schleiss, Marc; Russchenberg, Herman

### 12:00-12:15: ECSS2017-157

The potential impact of unmanned aircraft systems on storm-scale numerical weather prediction of supercells: Results from ensemble sensitivity analysis and observing system simulation experiments

Houston, Adam; Limpert, George; Keeler, Jason

Location: Room Belica

17:00-19:00

# E ESSL General Assembly

For members of the European Severe Storms Laboratory.

# All printed programme information as of 7 September 2017.

Please check local announcements or see ECSS message board or tweets for latest updates.

ECSS Twitter updates by @essl\_ecss. Please use #ecss2017 for your tweets.

Coffee break catering is included in the registration fee, meals during lunch break are not.

### 12:15-12:30: ECSS2017-133

Ensemble-based storm-scale analysis and prediction of severe convection: Single- vs double-moment microphysics

Seifert, Axel; de Lozar, Alberto; Blahak, Ulrich

### 12:30-12:45: ECSS2017-192

A Numerical Investigation of the Potential Effects of Aerosol-Induced Warming Aloft and Updraft Width and Slope on Updraft Intensity in Deep Convective Clouds Lebo, Zachary

### 12:45-13:00: ECSS2017-135

Forecasting both mature stage and initiation of a line-shaped mesoscale convective system by assimilation of XRAIN data

Yamaguchi, Kosei; Nakakita, Eiichi; Furuta, Kohei; Horiike, Yosuke

### END OF ORAL PROGRAMME SESSION 2

13:00 Lunch break

14:30-16:00

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

14:30–15:00: ECSS2017-4 Some Issues to Consider as Forecasts Evolve Over Time (solicited) Brooks, Harold

15:00–15:15: ECSS2017-127 Modelling Straight-Line Wind Impact in Europe Dixon, Mark

15:15–15:30: ECSS2017-26 Elasticity of Tornado Casualties in the United States Elsner, James; Fricker, Tyler

15:30–15:45: ECSS2017-70 Impact-Based Warnings of Severe Thunderstorms in South Africa Webster, Elizabeth

**15:45–16:00: ECSS2017-201** A catastrophe model of severe convective storms in Europe built using a combination of ESWD, ERA-interim and satellite data sources **Brocklehurst, Aidan**; Georgiadis, Alexandros; Braun, Lukas; Ulbrich, Sven

16:00 Coffee break

# Session 7 Severe weather forecast training

16:45-17:15: ECSS2017-200

Pre-Testing Trainees in Forecaster Training Workshops (solicited) **Doswell III, Charles A.** 

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### 17:15-17:30: ECSS2017-134

Combined use of complementary methods for a continuous thunderstorm forecast

Hamann, Ulrich; Besic, Nikola; Beusch, Lea; Buzzi, Matteo; Clementi, Lorenzo; Figueras i Ventura, Jordi; Hering, Alessandro M.; Leonarduzzi, Elena; Leuenberger, Andreas; Nerini, Daniele; Nisi, Luca; Sassi, Marco; Germann, Urs

### 17:30-17:45: ECSS2017-69

Baltic+ 2017 course on Convection - Collaborative Effort for High Quality Convection Training **Marcinoniene, Izolda**; Nietosvaara, Vesa

### END OF ORAL PROGRAMME SESSION 3

Location: Conference Lobby

18:00-20:00

# J Icebreaker Reception

Informal welcome cocktail and hors d'oeuvres.

# Tuesday, 19 September 2017

Location: Room Ulika

09:00-13:00

# Session 11 Storm climatologies, risk assessments and climate change

### 09:00-09:30: ECSS2017-168

Future of severe thunderstorm environments in Europe: simulated changes and uncertainties (solicited) **Pucik, Tomas**; Groenemeijer, Pieter; Rädler, Anja; Tijssen, Lars

### 09:30-09:45: ECSS2017-103

Impact of climate change on intense rainfall events in the Ligurian Sea region due to strong MCSs **Gallus, William**; Parodi, Antonio; Maugeri, Maurizio

### 09:45-10:00: ECSS2017-129

The Tornado Climatology of Australia: Assessing Risk and Evolution Through Time **Allen, John**; Allen, Edwina

### 10:00-10:15: ECSS2017-109

The modern climatology of Northern Eurasia tornadoes and waterspouts

**Chernokulsky, Alexander**; Kurgansky, Michael; Mokhov, Igor; Selezneva, Evgeniya; Shikhov, Andrey; Azhigov, Igor; Zakharchenko, Denis; Antonescu, Bogdan; Kühne, Thilo

### 10:15-10:30: ECSS2017-125

Tornadic stoms in the Iberian Mediterranean area and Balearic Islands: study of sounding-derived parameters Rodriguez, Oriol; **Bech, Joan**; García, Sergio

### 10:30-10:45: ECSS2017-139

Development of a globally consistent severe hail risk quantification model from re/insurance perspectives Liu, Zhiyuan; **Yin, Jianming**; Shinohara, Mizuki; Uchimura, Ryoma

### 10:45 Coffee break

### 11:30-11:45: ECSS2017-131

A European Probabilistic Severe Thunderstorm Model for the Insurance Industry

Robinson, Eric; Parker, Melanie; Bednarczyk, Chris; Luo, Jianjun; Kafali, Cagdas; Reinhardt, Bernhard; **Meul, Stefanie** 

### 11:45-12:00: ECSS2017-177

An additive regression convective hazard model (ARCHaMo) for detecting past and future trends in severe weather events

**Rädler, Anja T.**; Groenemeijer, Pieter; Púčik, Tomáš; Sausen, Robert; Faust, Eberhard

### 12:00-12:15: ECSS2017-186

Estimating the combined risk due to hail, convective gusts and tornadoes Haines, Philip; Grieser, Juergen

### 12:15-12:30: ECSS2017-150

A climatology of severe convective wind events in western central Europe

**Kreitz, Michaël**; Gatzen, Christoph; Schielicke, Lisa; Leprince, Sébastien; Martet, Maud

### 12:30-12:45: ECSS2017-72

Climatological aspects of convective parameters over Europe: a comparison of ERA-Interim and sounding data **Taszarek, Mateusz**; Brooks, Harold E.; Czernecki, Bartosz; Szuster, Piotr

### 12:45-13:00: ECSS2017-198

Trends of rain, wind-, snow- and thunderstorm events during the 21st Century according to regional climate models

**Groenemeijer, Pieter**; Púčik, Tomáš; Vajda, Andrea; Lehtonen, Ilari; Kämäräinen, Matti; Becker, Nico; Nissen, Katrin; Ulbrich, Uwe

### END OF ORAL PROGRAMME SESSION 11

13:00 Lunch break

Location: Belica

14:30-16:00

# H ECSS press briefing

### 16:00 Coffee break

Location: Room Ulika

16:45-18:15

# Sessions 4 & 5 Convective storms within extratropical, Mediterranean and tropical cyclones & Floods and flash floods

### 16:45-17:00: ECSS2017-154

Vortex identification and interactions across the scales **Schielicke, Lisa**; Gatzen, Christoph

### 17:00-17:15: ECSS2017-86

Tornado-like Vortices in a Meso-β-scale Vortex Associated with a Maritime Extratropical Cyclone: A Numerical Study **Tochimoto, Eigo**; Yokota, Sho; Niino, Hiroshi; Yanase, Wataru

### 17:15–17:30: ECSS2017-152 Study of flash floods in Portugal by radar-rain gauge adjustment Narciso, Paulo

17:30–17:45: ECSS2017-52 Understanding and PreDiction of Rainfall Associated with landFalling Tropical cyclones (UPDRAFT) Wang, Yuan

### 17:45-18:00: ECSS2017-160

Analysis of the evolution of lapse rates in the early evolution of a European cold-season derecho Gatzen, Christoph

18:00–18:15: ECSS2017-106 Entrainment rate of typhoon-associated supercells estimated by a large eddy simulation Sueki, Kenta; Niino, Hiroshi

### **END OF ORAL PROGRAMME Sessions 4 & 5**

# **Tuesday posters**

Location: Conference Lobby

Attendance time: 14:30-16:00

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

### P1: ECSS2017-28

Aircraft Moisture Observations: Their importance in Nowcasting and NWP

**Petersen, Ralph**; Hoover, Brett; Daloz, Anne-Sophie; Cronce, Lee; Wagner, Tim; Williams, Skylar; Mamrosh, Richard; Baker, Randy; Pauley, Patricia; Baker, Nancy

### P2: ECSS2017-53

Forecasting a wet microburst with high-resolution numerical models

**Pasi, Francesco**; Capecchi, Valerio; Messeri, Gianni; Melani, Samanta; Antonini, Andrea; Gozzini, Bernardo

### P3: ECSS2017-56

Convection-permitting ensemble forecast system design **Romine, Glen**; Sobash, Ryan; Schwartz, Craig; Fossell, Kate

### P4: ECSS2017-91

Supercell Predictability: Exploring Ensemble Sensitivity to Initial Condition Spread

Flora, Montgomery; **Potvin, Corey**; Wicker, Louis; Skinner, Patrick; Wheatley, Dustan; Knopfmeier, Kent

### P5: ECSS2017-96

A WRF-DART Study of the Nontornadic and Tornadic Supercells Intercepted by VORTEX2 on 10 June 2010 **Klees, Alicia**; Richardson, Yvette; Romine, Glen

### P6: ECSS2017-117

Assimilation of dual-polarization radar observations into convective scale models

Augros, Clotilde; Caumont, Olivier; Ducrocq, Véronique; Gaussiat, Nicolas

### P7: ECSS2017-130

Analysis of nocturnal convection initiation using convective-scale data assimilation of mobile radar and thermodynamic observations collected during PECAN **Marquis, James**; Wurman, Joshua; Romine, Glen; Weckwerth, Tammy; Wilson, Jim

### P8: ECSS2017-137

Assimilation of Radial Winds in an Ensemble Kalman Filter on the Convective Scale

**Bauernschubert, Elisabeth**; Potthast, Roland; Blahak, Ulrich; Stephan, Klaus

### P9: ECSS2017-140

Use of mesoscale models in operational severe weather forecast over large cities in Brazil - Results from the SOS-CHUVA Project

**D. Freitas, Edmilson**; Machado, Luiz; Albrecht, Rachel; Todesco, Enzo; Peres, Jean; Bender, Andréia; Siqueira, Isabela; Martins, Jorge; Martins, Leila; Hallak, Ricardo; Vendrasco, Éder; Sanchez, Madeleine; Hernandez, Lianet

### P11: ECSS2017-148

The role of vertical grid spacing in the simulation of storms **Martins, Jorge A.**; Conceição, Ana F. G.; Martins, Leila D.; Moraes, Marcos V. B.; Fujita, Thais; Rudke, Anderson P.; Eiras, Marília M.; Brand, Veronika S.; Rafee, Sameh A. A.; Hallak, Ricardo; Freitas, Edmilson D.

### P12: ECSS2017-167

Behavior of Vertical-Vorticity Rivers in Simulated Supercells

Dahl, Johannes; **Weiss, Christopher**; Bruning, Eric; Dowell, David; Alexander, Curtis

### P13: ECSS2017-187

A review of microphysics schemes within WRF model on the example of an isolated tornadic supercell in Poland on 20 June 2016

Pilguj, Natalia; Pajurek, Łukasz; Szuster, Piotr

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

### P14: ECSS2017-15

Severe weather and citizen science - Chasing the Austrian storm spotter **Keul, Alexander**; Diaconu, Madalina

### P15: ECSS2017-85

Information on severe weather related damage as a background for better risk assessment **Havrle Kozaric, Ivana**; Placko-Vrsnak, Dunja

### P16: ECSS2017-101

Nowcasting warning tools in the Meteorological Service of Catalonia

**Cladera, Pere**; Andrés, Aleix; Segalà, Santi; Aran, Montse

### P17: ECSS2017-170

Decision Support System for Winter Maintenance of the Motorways (DARS MDSS) Kršmanc, Rok; **Korošec, Marko**; Šajn Slak, Alenka; Čarman, Samo

### P18: ECSS2017-178

Design and preliminary test of a X-band polarimetric radar for gust detection system for safe railway operation **Fujiwara, Chusei**; Kusunoki, Kenichi; Inoue, Hanako; Ishitu, Naoki; Arai, Ken-ichiro; Onomura, Shiho; Suzuki, Hiroto

# **Tuesday posters continued**

Location: Conference Lobby

Attendance time: 14:30–16:00

# Sessions 4 & 5 Convective storms within extratropical, Mediterranean and tropical cyclones & Floods and flash floods

### P19: ECSS2017-83

Heavy precipitation events during HyMeX SOP1 Intensive Observation Periods over Croatia: Evaluating CNRM-ALADIN52 regional climate model Ivusic, Sarah; Güttler, Ivan; Horvath, Kristian

### P20: ECSS2017-54

Continental Tropical Low pressures over southern Africa **Webster, Elizabeth**; Dyson, Liesl

### P21: ECSS2017-93

Flash Flood Forecast Verification - Croatia, 2016 Mutic, Petra; Pelajic, Izidor

### P22: ECSS2017-153

Analysis of run-off rates and tracks of the resulting flash floods during a heavy rain event in Vienna (Austria) on 24 May 2014 **Strommer, Gabriel** 

### P23: ECSS2017-77

Analysis of short-term rainfall time structure by concentration indexes Müller, Miloslav; Bližňák, Vojtěch; Kašpar, Marek

# Session 6 Forecasting and nowcasting of severe weather

### P24: ECSS2017-37

Significant-hail producing thunderstorms in Finland: Synoptic environment

Rauhala, Jenni; Laurila, Terhi; Mäkelä, Antti; Jylhä, Kirsti

### P25: ECSS2017-14

Development of a new seamless prediction system for very short range convective-scale forecasting at DWD **Blahak, Ulrich**; Potthast, Roland; Wapler, Kathrin; Seifert, Axel; De Lozar, Alberto; Bauernschubert, Elisabeth; Welzbacher, Christian; Osinski, Robert; Rempel, Martin; Hoff, Michael; Junk, Markus; Bach, Liselotte

### P26: ECSS2017-18

Excessive precipitation over parts of Germany in June 2016: Characteristics of the general weather situation and aspects of the forecast **Beyer, Marcus**; Tuschy, Helge; Fruntke, Julia

### P27: ECSS2017-25

Tracking of radar reflectivity cores and their characteristics - utilization in operational application **Kyznarova, Hana**; Novak, Petr

### P28: ECSS2017-39

A case study of a EF1 tornado in eastern Bohemia (Czech Republic) in 2016 **Tomšů, Radek** 

### P29: ECSS2017-43

Fog nowcasting system for Irkutsk airport **Bazlova, Tatiana**; Bocharnikov, Nikolai; Solonin, Alexander

### P30: ECSS2017-49

The use of prognostic spatial information at the evaluation of the QPF for heavy convective rainfalls **Zacharov, Petr**; Řezáčová, Daniela; Brožková, Radmila

### P31: ECSS2017-50

Stability indices and wind shear for forecasting severe storm type over Bulgaria **Markova, Boryana**; Dimitrova, Tsvetelina; Kadiyska, Nadezhda; Mitzeva, Rumjana

### P32: ECSS2017-51

SOS-CHUVA - A Nowcasting Project Machado, Luiz; **Freitas, Edmilson**; Vendrasco, Eder; Nacaratto, Kleber; Albrecht, Rachel; Vila, Daniel; Avila, Ana; Pilau, Felipe; Sanchez, Madeleine; Guarino, Luiz; Ribaud, Jean-François

# Session 7 Severe weather forecast training

### P33: ECSS2017-46

The advantages of using intra-cloud data for severe weather warnings **Rigo, Tomeu**; Farnell, Carme

### P34: ECSS2017-182

Step by Step Guidance for Monitoring Convection through Satellite Observations Irsic Zibert, Mateja; Tusinska, Aleksandra; Nietosvaara,

Vesa

# **Tuesday posters continued**

Location: Conference Lobby

Attendance time: 14:30-16:00

# Session 8 Satellite studies of storms and their environment

### P35: ECSS2017-11

Comparison of satellite-, lightning- and radar observations in some severe thunderstorm cases **Simon, André**; Putsay, Mária; Kocsis, Zsófia; Csirmaz,

Kálmán; Szenyán, Ildikó

### P36: ECSS2017-138

Numerical analysis of mesoscale shear in convective environments using data assimilation of super-rapid-scan GOES-derived wind vectors Marquis, James; Wurman, Joshua

### P37: ECSS2017-179

30 days reveal a lot - A cumulonimbus (CB) verification of the convective cloud mask by Berendes et al. (2008) in central Europe. **Schubert, Thomas** 

### P38: ECSS2017-190

The relationship between cloud parameters and storm severity based on lightning and satellite data over Ukraine **Kryvobok, Oleksii** 

### P39: ECSS2017-29

Improving Convective Weather Nowcasts by Coupling Convective Initiation Products to GOES-R Legacy Sounding NearCasts of the Storm Environment **Petersen, Ralph**; Cronce, Lee; Mecikalski, John; Jewett,

Chris

# Session 11 Storm climatologies, risk assessments and climate change

### P40: ECSS2017-6

Characteristics of convective wind gusts in Germany **Mohr, Susanna**; Kunz, Michael; Richter, Alexandra; Ruck, Bodo

### P41: ECSS2017-8

Ten years of tornadoes and waterspouts in Italy Miglietta, Mario Marcello; Matsangouras, Ioannis

### P42: ECSS2017-20

Long-term characteristics of convective storms over the Czech Republic derived from 15-Yr datasets of lightning detection and weather radar measurements **Novak, Petr**; Kyznarová, Hana

### P43: ECSS2017-21

Florida's Annual Expected Property Losses from Tornadoes **Elsner, James**; Ryan, Emily; Strode, Georgiana; Mesev, Victor

### P44: ECSS2017-30

Lightning activity in central Europe - preliminary climatology Mikus Jurkovic, Petra; Strelec Mahovic, Natasa

### P45: ECSS2017-38

Cold season tornadoes in Bulgaria Bocheva, Liliya; Markova, Boryana

### P46: ECSS2017-42

Estimating severe windstorm occurrence across Australia using Bayesian modelling **Spassiani, Alessio**; Mason, Matthew; Krupar III, Richard J.

### P47: ECSS2017-48

Favorable meteorological conditions for different types of organized convection **Blašković, Marko**; Strelec Mahović, Nataša; Mikuš Jurković, Petra; Renko, Tanja

### P48: ECSS2017-62

Temporal and spatial variability of convective predisposition across Europe and potential drivers **Kunz, Michael**; Piper, David; Mohr, Susanna

### P49: ECSS2017-75

A satellite-based study of tornado climatology in forested regions of northeast Europe **Shikhov, Andrey**; Chernokulsky, Alexander

### P50: ECSS2017-78

Effects of orography on spatial distribution of convective precipitation in Banská Bystrica district (Slovakia) **Kvak, Róbert**; Müller, Miloslav

### P51: ECSS2017-88

Modeling and Correcting Reporting Biases in the Storm Prediction Center Tornado Database **Potvin, Corey**; Broyles, Chris; Skinner, Patrick; Brooks, Harold

### P52: ECSS2017-89

Ten-year lightning patterns in Catalonia using Multivariable Analysis **Aran, Montse**; Peña, Juan Carlos; Pineda, Nicolau; Soler, Xavier; Pérez-Zanón, Núria

### P53: ECSS2017-90

Summertime hailstorms over Switzerland in surrogated climate change simulations **Martynov, Andrey**; Nisi, Luca; Martius, Olivia

### P54: ECSS2017-111

Modelling Hail Impact, part 2: From hazard to loss **Hill, Marc**; Grieser, Juergen

### P55: ECSS2017-115

Long-term variations and trends in the occurrence of thunderstorms in Finland Laurila, Terhi; Mäkelä, Antti; Jylhä, Kirsti

# **Tuesday posters continued**

Location: Conference Lobby

Attendance time: 14:30–16:00

### P56: ECSS2017-116

Modelling Hail Impact, part 1: How many hail stones of what size? Grieser, Jürgen; Hill, Marc

### P57: ECSS2017-120

A Cloud-to-Ground Lightning Climatology for Basque Country

**Gaztelumendi, Santiago**; Etxezarreta, Arkaitz; Egaña, Joseba; Aranda, José Antonio

### P58: ECSS2017-132

Statistical analysis of the spatial and temporal distribution of tornadoes in Germany Kühne, Thilo; **Kollmohr, Andreas**; Hubrig, Martin; Sävert, Thomas; Schlenczek, Oliver; Simon, Werner; Wichmann, Heiko

### P59: ECSS2017-147

Future convective weather risks in Europe and Near East Kahraman, Abdullah

### P60: ECSS2017-173

100 Years after Alfred Wegener's Opus on Tornadoes in Europe **Antonescu, Bogdan**; Ricketts, Hugo; Schultz, David M.

P61: ECSS2017-189

Analysis of severe convective wind gusts in Serbia **Rabrenović**, **Maja**; Gatzen, Christoph

### P62: ECSS2017-193

Comparison between European and US severe convective weather environments **Rädler, Anja T.**; Pucik, Tomas; Groenemeijer, Pieter; Tijssen, Lars

### P64: ECSS2017-197

Decadal Predictability of Convective Hazards: A Possibility? **Tijssen, Lars**; Groenemeijer, Pieter; Rädler, Anja

### P65: ECSS2017-122

The Cerdanya-2017 field experiment: preliminary analysis of storm events

**Bech, Joan**; Trapero, Laura; Soler, Maria Rosa; Udina, Mireia; Paci, Alexandre; Garcia-Benadí, Albert; Gonzalez, Sergi; Miró, Josep Ramon; Mercader, Jordi; Molinié, Gilles; Codina, Bernat; Albalat, Anna; Rossell, Àngela

# Session 14 Additional posters (Tuesday)

P66: ECSS2017-87 Characteristics of Thunderstorms in Slovenia Irsic Zibert, Mateja

### END OF POSTER PROGRAMME

# Wednesday, 20 September 2017

Location: Room Ulika

09:00-13:00

# Session 6 Forecasting and nowcasting of severe weather

### 09:00-09:30: ECSS2017-105

What have we learned about high-shear low-CAPE severe weather? A review. (solicited) **Parker, Matthew** 

### 09:30-09:45: ECSS2017-2

Forecasting and Nowcasting Severe Weather Using the Operational Warning Decision Support System AutoWARN at DWD **Reichert, Bernhard** 

### 09:45-10:00: ECSS2017-5

Performance of waterspout forecasting method using high resolution numerical weather model Ivusic, Sarah; **Renko, Tanja**; Telisman Prtenjak, Maja; Horvat, Igor; Soljan, Vinko; Szilagyi, Wade

### 10:00-10:15: ECSS2017-7

Numerical simulations of a tornadic supercell in the Mediterranean

Miglietta, Mario Marcello; Mazon, Jordi; Rotunno, Richard

### 10:15-10:30: ECSS2017-23

Evaluation of ECMWF products for forecasting severe convection

**Tsonevsky, Ivan**; Doswell III, Charles A.; Brooks, Harold; Pillosu, Fatima; Hewson, Tim

### 10:30-10:45: ECSS2017-44

Utilization of a 3D High-Precision Network (LINET) for Optimized Nowcasting of Hail **Moehrlein, Matthias**; Riso, Silvia; Betz, Hans-Dieter

### 10:45 Coffee break

### 11:30-11:45: ECSS2017-55

Remote sensing: data combination as a key for storm nowcasting

Valachova, Michaela; Kyznarova, Hana; Novak, Petr; Setvak, Martin

### 11:45-12:00: ECSS2017-81

Analysis of May 13th 2015 tornado event at Gerbépal (France) using radar, lightning and NWP model data **Le Bastard, Tony**; Kreitz, Michael; Baille, Sébastien; Prévot, Daniel

### 12:00-12:15: ECSS2017-118

The use of self-organizing maps to characterize the tornadic near-storm environment **Anderson-Frey, Alexandra**; Richardson, Yvette; Dean, Andrew; Thompson, Richard; Smith, Bryan

### 12:15-12:30: ECSS2017-119

Object-based operational nowcasting of severe thunderstorms in the Alpine area **Hering, Alessandro**; Nisi, Luca; Hamann, Ulrich; Besic, Nikola; Trefalt, Simona; Germann, Urs

### 12:30-12:45: ECSS2017-191

Forecasts of convective storms using 3-km and 1-km horizontal grid spacing: When is higher resolution needed? **Sobash, Ryan**; Schwartz, Craig; Romine, Glen; Weisman, Morris

### 12:45-13:00: ECSS2017-13

A multi-data process study of a severe hail storm in complex topography **Trefalt, Simona**; Martynov, Andrey; Germann, Urs; Martius, Olivia

### **END OF ORAL PROGRAMME SESSION 6**

### 13:00 Lunch break

14:30-23:00 C Social Events

### 14:30

Bus transfer from the hotel Histria (ECSS venue) to Fažana. Meeting place in front of hotel Histria.

### 15:30

Boat departs from Fažana for NP Brijuni (island tour, no drinks or meals included).

### 19:30

Boat returns to Fažana from NP Brijuni

### 20:00

Return to the hotel Histria (ECSS venue) via bus transfer.

### 21:00

**Conference Dinner at hotel Histria (ECSS venue)** and giving of the Nikolai Dotzek Award.

# Thursday, 21 September 2017

Location: Room Ulika

09:00-10:45

# Session 1 Convective storm and tornado dynamics

### 09:00-09:30: ECSS2017-163

The regulation of tornado intensity by updraft width (solicited)

Trapp, Robert; Marion, Geoffrey; Nesbitt, Stephen

### 09:30-09:45: ECSS2017-104

Above-ground thermodynamic observations in supercell thunderstorms obtained from pseudo-Lagrangian drifters **Markowski, Paul**; Richardson, Yvette; Richardson, Scott

### 09:45-10:00: ECSS2017-66

The TWIRL (Tornado Winds from In-situ and Radars at Low-level) Project: Part 1: Project Overview and Combined Radar-in situ-damage analyses **Kosiba, Karen**; Wurman, Josh

### 10:00-10:15: ECSS2017-67

TWIRL: Part 2: Very Fine-Scale Dual-Doppler and In Situ Analysis of a Strong Tornado **Wurman, Josh**; Bluestein, Howard; Kosiba, Karen; Reif, Dylan; Robinson, Paul; Wienhoff, Zachary

### 10:15-10:30: ECSS2017-143

Numerical simulations of tornadoes in complex urban landscape **Jewtoukoff, Valérian**; Markowski, Paul; Richardson, Yvette

### 10:30-10:45: ECSS2017-155

Preliminary Results from the 2016 and 2017 VORTEX-SE Project

Weiss, Christopher; Bruning, Eric; Dahl, Johannes; Dowell, David; Alexander, Curtis; Hill, Aaron; Chmielewski, Vanna

### END OF ORAL PROGRAMME Session 1

### 10:45 Coffee break

### 11:30-13:00

# Session 9 Radar studies of storms

### 11:30-12:00: ECSS2017-165

Hail frequency in central Europe estimated from 2D radar data and the relation to atmospheric characteristics (solicited)

**Kunz, Michael**; Fluck, Elody; Baumstark, Sven; Wandel, Jan; Ritz, Stefan; Geissbuehler, Peter; Schemm, Sebastian; Schmidberger, Manuel

### 12:00-12:15: ECSS2017-3

Tornadogenesis and tornado evolution documented using rapid-scan, mobile, Doppler radars **Bluestein, Howard**; Thiem, Kyle; Wienhoff, Zach; Reif, Dylan; Snyder, Jeffrey; Houser, Jana

### 12:15-12:30: ECSS2017-45

Mesoscale Convective Systems in the Western Mediterranean **Rigo, Tomeu**; Berenguer, Marc

### 12:30-12:45: ECSS2017-63

Radar and satellite observations of a severe wet microburst over Tuscany

**Melani, Samantha**; Antonini, Andrea; Pasi, Francesco; Capecchi, Valerio; Messeri, Gianni; Ortolani, Alberto; Gozzini, Bernardo

### 12:45-13:00: ECSS2017-22

Tracking hailswaths on radar data between 2002 and 2016: a new perspective for climatological studies of hail in the Alps. **Nisi, Luca**; Hering, Alessandro; Germann, Urs;

Martius, Olivia

### END OF ORAL PROGRAMME SESSION 9

### 13:00 Lunch break

Location: Room Belica

15:00-16:30

# F CWG splinter meeting

On invitation. Meeting of the EUMETSAT Convection Working Group.

16:00 Coffee break

### Location: Room Ulika

### 16:45-18:15

# Session 8 Satellite studies of storms and their environment

### 16:45-17:15: ECSS2017-27

Potential of stereoscopic imagery based on Meteosat Second Generation satellites (solicited) **Kaňák, Ján**; Okon, Ľuboslav; Setvák, Martin; Diószeghy, Márta; Nietosvaara, Vesa

### 17:15-17:30: ECSS2017-12

Satellite observations of gravity waves, generated by convective storms Setvak, Martin; Wang, Pao K.; Šťástka, Jindřich; Radová, Michaela

### 17:30-17:45: ECSS2017-41

Convective cloud detection product derived from Himawari-8/9 rapid scan observation **Sumida, Yasuhiko**; Suzue, Hiroshi

### 17:45-18:00: ECSS2017-80

Convective growth and glaciation with Meteosat in relation to precipitation formation **Senf, Fabian**; Deneke, Hartwig

### 18:00-18:15: ECSS2017-73

Spatio-temporal variation of hail features and associated mix phase microphysical properties as detected by satellite onboard sensors in two different climatic convective regimes

Sharma, Sanjay; Roy, Partha; Biswasharma, Rupraj

### END OF ORAL PROGRAMME SESSION 8

### Location: Room Ulika

18:20-19:00

# I Informal Photo and Video Session

Additional material on stereoscopic satellite imagery will be presented by Ján Kaňak. Also photos or videos of historical and recent European tornadoes will be shown by other presenters.

# Thursday posters

Location: Conference Lobby

Attendance time: 14:30-16:00

# Session 1 Convective storm and tornado dynamics

### P1: ECSS2017-32

Statistical features of near-ground tornadic vortices in comparison with radar-observed vortices aloft **Onomura, Shiho**; Kusunoki, Kenichi; Inoue, Hanako; Ishitsu, Naoki; Arai, Ken-ichiro; Fujiwara, Chusei

### P2: ECSS2017-34

A Linear Array of Wind and Pressure Sensors for High Resolution in situ Measurements in Winter Tornadoes **Kusunoki, Kenichi**; Onomura, Shiho; Arai, Ken-ichiro; Fujiwara, Chusei

### P3: ECSS2017-36

Two tornado events in Germany: Ingredients-based approach and cell merging **Tuschy, Helge**; Fruntke, Julia; Beyer, Marcus

### P4: ECSS2017-68

Plains Elevated Convection At Night (PECAN): Evaluating Severe Surface Wind Potential in a Nocturnal MCS **Kosiba, Karen**; Wurman, Josh

### P5: ECSS2017-142

Exploring the influence of outflow surges on developing and mature tornadoes using a toy model **Jewtoukoff, Valérian**; Markowski, Paul; Richardson, Yvette

### P6: ECSS2017-158

The sensitivity of simulated near-surface mesovortices to environmental vertical shear Houston, Adam

### P7: ECSS2017-159

On the role of deformation in the maintenance of (stationary) vortex systems **Schielicke, Lisa**; Nevir, Peter; Müller, Annette

### P8: ECSS2017-169

Measurement of the three dimensional velocity field of tornado-like vortex by the experimental study **Tanimoto, Saki**; Sassa, Koji; Watanabe, Hanaka

# Thursday posters continued

Location: Conference Lobby

Attendance time: 14:30-16:00

# Session 6 Forecasting and nowcasting of severe weather

### P9: ECSS2017-59

New adjustments to the 3D convective cells identification applied to severe weather study cases. **del Moral, Anna**; Rigo, Tomeu; Llasat, Maria Carmen

### P10: ECSS2017-64

Storm-Scale Ensemble Forecasts for the NOAA HWT Spring Forecasting Experiment and HMT FFaIR Experiment

**Kong, Fanyou**; Xue, Ming; Jung, Youngsun; Brewster, Keith; Snook, Nathan

### P11: ECSS2017-79

Convection Nowcast for Air Traffic Management Verification **Šoljan, Vinko**; Jurković, Jadran

### P13: ECSS2017-100

Evaluation of 3 operational severe convective indexes on historical storms that have hit France. **Boisserie, Marie**; Dupont, Fabienne; Maynard, Karine

### P14: ECSS2017-110

Detection, tracking, and nowcasting of convective storms using KONRAD3D Werner, Manuel

### P15: ECSS2017-128

The use of a Semi-automated Severe Convection Checklist at MeteoSwiss Forecast Offices **Peyraud, Lionel**; Moret, Lionel; Ulrich, Didier

### P16: ECSS2017-136

Thunderstorm nowcasting by applying machine learning to a multi-sensor observation and NWP model data base **Beusch, Lea**; Clementi, Lorenzo; Hamann, Ulrich; Hering, Alessandro M.; Leonarduzzi, Elena; Nerini, Daniele; Nisi, Luca; Sassi, Marco; Germann, Urs

### P18: ECSS2017-151

Coastal flooding in Rovinj: the case of February 10th 2016.

Fustar, Lidija; Botica, Kata; Ljubas, Tomislava

### P19: ECSS2017-171

Use of new radar products for nowcasting of severe storms

Böhme, Tim; Herold, Christian; Schappert, Sebastian

### P20: ECSS2017-174

Development of operational waterspout forecast product for Adriatic Sea using ALADIN NWP model. **Horvat, Igor**; Renko, Tanja; Stanešić, Antonio; Szilagyi, Wade

### P21: ECSS2017-176

Supercell structures developed over Serbia associated to severe weather events in western Romania - a conceptual approach

Bugeac, Octavian Paul; Stefan, Sabina; Mihajlovic, Goran

### P22: ECSS2017-196

Medium-range forecasting of convective hazards using ESSL's Additive Regression Convective Hazard Model (ARCHaMo)

Tijssen, Lars; Groenemeijer, Pieter; Rädler, Anja

# Session 9 Radar studies of storms

### P23: ECSS2017-35

A study of anomalous radar signatures observed in Bulgaria regarding severe hail nowcasting **Georgiev, Stefan**; Dlmitrova, Tsvetelina

### P24: ECSS2017-47

An estimation of the dual-polarization C-band radar products in the hail events cases. **Liman, Ljubov** 

### P25: ECSS2017-61

Storm-scale surface analyses constructed from home AWS data for a severe hailstorm over northern England **Clark, Matthew**; Webb, Jonathan; Kirk, Peter

### P26: ECSS2017-74

Mini supercell accompanied by multiple vortex tornado in Kochi, Japan Sassa, Koji; Yuasa, Soichiro

### P27: ECSS2017-166

Occurrence of supercells in Slovakia in 2000 - 2012 Šinger, Miroslav

### P28: ECSS2017-183

Spatial characterisation of hailstorms in Europe using radar data **Hartley, Sarah**; Chalmers, Mutahar; Grieser, Juergen

# Thursday posters continued

Location: Conference Lobby Attendance time: 14:30–16:00

# Session 10 Storm electrification, lightning, microphysics and hail

### P29: ECSS2017-17

The rough Palagru, a sailing ride - Analysis of a marine ball lightning event **Keul, Alexander**; Diendorfer, Gerhard

### P30: ECSS2017-24

Cloud electrification modelling - preliminary results Sokol, Zbyněk; **Minářová, Jana** 

### P31: ECSS2017-31

Radar derived characteristics of hail events in Czechia **Skripniková, Kateřina**; Řezáčová, Daniela; Kyznarová, Hana; Novák, Petr

### P32: ECSS2017-57

Simulation of processes of artificial lightning initiation by model hydrometeors array using artificial thunderstorm cells

**Temnikov, Alexander**; Chernensky, Leonid; Lysov, Nikolay; Orlov, Alexander; Belova, Olga; Gerastenok, Tatiana; Zhuravkova, Daria; Kalugina, Inna

### P33: ECSS2017-58

Investigation of peculiarities of discharge between artificial thunderstorm cell and ground in presence of model hydrometeors array

**Temnikov, Alexander**; Zhuravkova, Daria; Chernensky, Leonid; Lysov, Nikolay; Orlov, Alexander; Belova, Olga; Gerastenok, Tatiana; Gundareva, Svetlana

### P34: ECSS2017-65

Lightning forecast for North Caucasus Region Gubenko, Inna

### P36: ECSS2017-108

Exploring thunderstorm patterns related to severe weather with Lightning Mapping Array data **Salvador Yuste, Albert**; Pineda, Nicolau; Montanyà, Joan; Solà, Glòria; van der Velde, Oscar

### P37: ECSS2017-121

A study of active thunderstorm episodes in Basque Country

**Gaztelumendi, Santiago**; Egaña, Joseba; Etxezarreta, Arkaitz; Aranda, José Antonio

### P38: ECSS2017-180

Hail and Heavy Rain Events Measured by Videodisdrometer in Prague, Czech Republic **Chládová, Zuzana**; Fišer, Ondřej; Pitaš, Karel;

Skripniková, Kateřina

### P39: ECSS2017-19

Comparison of haildata recorded on polygon in Austria and Croatia (2002-2016) **Počakal, Damir**; Svabik, Otto

### P41: ECSS2017-82

A hail climatology for South Africa **Dyson, Liesl**; Pienaar, Nita

### P42: ECSS2017-92

Summertime hailstorms over Switzerland in 2012 -2015 in convection-permitting WRF simulations: assessment of modeling performance Martynov, Andrey; Nisi, Luca; Martius, Olivia

### P43: ECSS2017-123

Hail Size: What We Know Around the World **Allen, John**; Tippett, Michael

# Session 12 Collection of storm data, historical events and damage assessments

### P44: ECSS2017-9

Sub-daily temporal reconstruction of historical extreme precipitation events using NWP model simulations **Bližňák, Vojtěch**; Müller, Miloslav; Zacharov, Petr; Kašpar, Marek; Kvak, Róbert

### P45: ECSS2017-33

Local enhancement of latent instability and vertical wind shear in the Alpine foreland during the 1984 Munich hailstorm case

Púčik, Tomáš; Zacharov, Petr; Groenemeijer, Pieter

### P46: ECSS2017-71

Deadly Tornadoes in Poland from 1820 to 2015 Taszarek, Mateusz; Gromadzki, Jakub

### P47: ECSS2017-95

Damage Assessment of the 2016 F2-Tornado near Karlstein, Lower Austria **Kaltenberger, Rainer**; Weber, Manuel

### P48: ECSS2017-124

A study of 13 september 2016 storm event in Basque Country Egaña, Joseba; Principe, Olatz; Pierna, David; Gaztelumendi, Santiago

### P49: ECSS2017-126

A study of convective severe storms in Basque Country during XXI century Egaña, Joseba; **Gaztelumendi, Santiago**; Pierna, David; Principe, Olatz

### P50: ECSS2017-156

Combined analysis of severe convective wind gusts in European data sets **Gatzen, Christoph**; Kreitz, Michaël; Leprince, Sébastien;

Schielicke, Lisa; Rabrenović, Maja; Enno, Sven-Eric

### P51: ECSS2017-172

Crowd Sourcing of Weather Observations at European National Meteorological Services **Krennert, Thomas**; Christian, Csekits

# Thursday posters continued

Location: Conference Lobby

Attendance time: 14:30-16:00

P52: ECSS2017-184 Historic severe weather events in Austria (1815-1830): Impacts on society and magnitude assessments Pfeifer, Katrin; Holzer, Alois M.

P53: ECSS2017-185 Historic severe weather events in Europe (414 BC - 1590) Pfeifer, Katrin; Holzer, Alois M.; Kühne, Thilo

P54: ECSS2017-188 Experience after 1 year of EWOB Holzer, Alois M.; Groenemeijer, Pieter; Riemann-Campe, Kathrin; Antonescu, Bogdan

# Session 13 Additional posters (Thursday)

P56: ECSS2017-202 Probabilistic nowcasting of convective rainfall Ośródka, Katarzyna; Jurczyk, Anna; Szturc, Jan; Giszterowicz, Mateusz

P57: ECSS2017-203 Sounding-Derived Parameters Associated with Convective Hazards in Europe Taszarek, Mateusz; Brooks, Harold E.; Czernecki, Bartosz

END OF POSTER PROGRAMME

# Friday, 22 September 2017

Location: Room Ulika

09:00-11:00

# Session 10 Storm electrification, lightning, microphysics and hail

### 09:00-09:30: ECSS2017-97

Enhancing thunderstorm warnings in developing countries based on lightning location data (solicited) **Mäkelä, Antti**; Laurila, Terhi; Pietarila, Harri

### 09:30-09:45: ECSS2017-10

Analysis of orographic influence on hail parameters in NW Croatia

**Počakal, Damir**; Večenaj, Željko; Mikuš, Petra; Grisogono, Branko

### 09:45-10:00: ECSS2017-84

Analysis and simulations of the 4 July 2007 large hailstorm in NE Italy **Manzato, Agostino (Tino)**; Riva, Valentino; Miglietta,

Manzato, Agostino (Tino); Riva, Valentino; Miglietta, Mario Marcello; Laviola, Sante

### 10:00-10:15: ECSS2017-107

Numerical simulation of convective squall lines over Southwest England with detailed microphysical scheme **Sarkadi, Noémi**; Geresdi, István; Thompson, Greg; Miltenberger, Annette; Rosenberg, Phil; Hill, Adrian

### 10:15-10:30: ECSS2017-145

Mapping of thunderstorm charge structures by automated lightning leader speed analysis of Lightning Mapping Array data: applications and statistics **van der Velde, Oscar**; Montanyà, Joan; López, Jesús Alberto; Pineda, Nicolau

### 10:30-10:45: ECSS2017-162

The Impact of Vertical Wind Shear on Hail Growth in Simulated Supercell Storms **Kumjian, Matthew**; Dennis, Eli

### 10:45-11:00: ECSS2017-112

The life-cycle of hail storms: lightning, radar reflectivity and rotation characteristics **Wapler, Kathrin** 

### **END OF ORAL PROGRAMME SESSION 10**

### 11:00 Coffee break

11:45-13:00

# Session 12 Collection of storm data, historical events and damage assessments

### 11:45-12:00: ECSS2017-164

Innovative approaches for crop hail damage assessment based on Radar and drone technologies

**Tani, Satyanarayana**; Paulitsch, Helmut; Fraundorfer, Friedrich; Süsser-Rechberger, Barbara; Teschl, Reinhard; Rumpler, Markus; Hofer, Manuel

### 12:00-12:15: ECSS2017-102

Japanese Enhanced Fujita Scale: Its Development and Implementation

**Niino, Hiroshi**; Tamura, Yukio; Ito, Masaru; Kikitsu, Hitomitsu; Maeda, Junji; Okuda, Yasuo; Sakata, Hiroyasu; Shoji, Yoshinori; Suzuki, Satoru; Tanaka, Yoshinobu

### 12:15-12:30: ECSS2017-175

Trusted Spotter Network Austria - Towards a New Standard in the Field of Crowd-SourcedWeather- and Impact-Observations?

Krennert, Thomas; Kaltenberger, Rainer; Pistotnik, Georg; Holzer, Alois M.; Zeiler, Franz; Stampfl, Mathias

### 12:30-12:45: ECSS2017-194

The Role of Crowdsourcing in the Retrieval of Severe Weather Information in the Past, Present and Future **Pistotnik, Georg**; Krennert, Thomas; Stadlbacher, Klaus

### END OF ORAL PROGRAMME SESSION 12

13:00-14:15 D Closing and Awards Session

# Saturday, 23 September 2017

Location: Room Belica

09:00-18:00

# G

# Introduction seminar: Forecasting of Severe Convective Storms by Dr. Charles A. Doswell.

On registration.

Notes:



# Scientific programme overview - ECSS2017

	Monday	Tuesday	Wednesday	Thursday	Friday
09:00 09:15	A: OPENING SESSION				
09:30	2: Numerical modelling of storms, storm-scale data assimilation	11: Storm climatologies, risk assessments and climate change	6: Forecasting and nowcasting of severe weather	1: Convective storm and tornado dynamics	10: Storm electrification, lightning, microphysics and hail
10:45 11:00 11:15	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK
11:30 11:45 12:00 12:15 12:30 12:45	2 continued: Numerical modelling of storms, storm-scale data assimilation	11 continued: Storm climatologies, risk assessments and climate change	6 continued: Forecasting and nowcasting of severe weather	9: Radar studies of storms	12: Collection of storm data, historical events and damage assessments
13:00 13:15 13:30 13:45 14:00 14:15	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	D: CLOSING and AWARDS SESSION
14:30 14:45 15:00 15:15 15:30 15:45	3: Impact of storms on society, impact mitigation and early warning systems	TUESDAY POSTER SESSION		THURSDAY POSTER SESSION	
16:00 16:15 16:30	COFFEE BREAK	COFFEE BREAK	SPONSORED SOCIAL EVENTS	COFFEE BREAK	
16:45 17:00 17:15 17:30 17:45 18:00	7: Severe weather forecast training	4 & 5: Convective storms within extratropical, Mediterr. and tropical cyclones & Floods and flash floods		8: Satellite studies of storms and their environment	

On site registration desk – opening hours:

Sun 15:00 – 21:00 Mon 08:00 – 18:00 Tue – Fri starting at 08:30



# Sidemeetings and social programme overview - ECSS2017

Monday	Tuesday	Wednesday	Thursday	Friday
A: OPENING SESSION 2: Numerical modelling of storms, storm-scale data assimilation	11: Storm climatologies, risk assessments and climate change	6: Forecasting and nowcasting of severe weather	1: Convective storm and tornado dynamics	10: Storm electrification, lightning, microphysics and hail
COFFEE BREAK	Conference Photo COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK
2 continued: Numerical modelling of storms, storm-scale data assimilation	11 continued: Storm climatologies, risk assessments and climate change	6 continued: Forecasting and nowcasting of severe weather	9: Radar studies of storms	12: Collection of storm data, historical events and damage assessments
LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	D: CLOSING and AWARDS SESSION
3: Impact of storms on society, impact mitigation and early warning	14:30 ECSS press briefing (room Belica)	14:30 Bus transfer from the hotel Histria (ECSS venue) to Fažana. Meeting place in front of hotel Histria.	15:00 CWG splinter	
systems			meeting (room Belica)	
COFFEE BREAK	COFFEE BREAK		COFFEE BREAK	
7: Severe weather forecast training	4 & 5: Convective storms within extratropical, Mediterr. and tropical cyclones & Floods and flash floods	15:30 Boat departs from Fažana to National Park Brijuni (island tour). No drinks or meals included.	8: Satellite studies of storms and their environment	
Informal icebreaker Reception		19:30 Boat returns	Informal photo and video session	
		21:00 Conference Dinner at hotel Histria (ECSS venue)		

Sun, 17 Sep 2017: 17:00 ESSL General Assembly, room Belica.

Sat, 23 Sep 2017: 09:00 Introduction Seminar - Forecasting Severe Convective Storms, room Belica.

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