

Guideline for the chat of the session ITS4.3/AS5.2 “Machine learning for Earth System modelling”

General recommendation:

- For authors: please prepare 2-3 sentences (not too long) of introduction about your work.
- For all attendees: Try to prepare some questions in advance for the presentations you are interested in.
- All posts should begin with the name of the recipient of the message.
If you ask a question: @autor_name + question.
If you answer a question: @name_of_the_person_who_asked_the_question

The session is divided into 2 time-slots. To have more time, each presentation will be discussed in a group of 3-4 abstracts, so each work will have 20 minutes.

For each group, the timing is the following:

- 1) The chairman announces the papers that will be discussed
- 2) The authors post 2-3 sentences each about their work
- 3) Question/answer
- 4) We can leave a bit of time in the end to give authors time to answer any last questions.

Schedule of the session Wednesday 14:00–15:45

Group 1

D2327 |

EGU2020-19339

[Developing a data-driven ocean model](#)

Rachel Furner, Peter Haynes, Dan Jones, Dave Munday, Brooks Paige, and Emily Shuckburgh

D2328 |

EGU2020-21754

[Machine Learning of committor functions for predicting high impact climate events](#)

Dario Lucente, Freddy Bouchet, and Corentin Herbert

D2329 |

EGU2020-20207

[Learned Criticality in “Supermodels” That Combine Competing Models of the Earth System With Adaptable Inter-Model Connections](#)

Gregory Duane and Mao-Lin Shen

D2330 |

EGU2020-20845

[Learning Lyapunov stable Dynamical Embeddings of Geophysical Dynamics](#)

Said Ouala, Lucas Drumetz, Bertrand Chapron, Ananda Pascual, Fabrice Collard, Lucile Gaultier, and Ronan Fablet

Group 2

D2331 |

EGU2020-7569

[Boosting performance in Machine Learning of Turbulent and Geophysical Flows via scale separation](#)

Davide Faranda, Mathieu Vrac, Pascal Yiou, Flavio Maria Emanuele Pons, Adnane Hamid, Giulia Carella, Cedric Gacjal Ngoungue Langué, Soulihanh Thao, and Valerie Gautard

D2333 |

EGU2020-14055

[Large-eddy simulation subgrid modelling using neural networks](#)

Robin Stoffer, Caspar van Leeuwen, Damian Podareanu, Valeriu Codreanu, Menno Veerman, and Chiel van Heerwaarden

D2334 |

EGU2020-9820

[Machine learning for detection of climate extremes: New approaches to uncertainty quantification](#)

William Collins, Travis O'Brien, Mr Prabhat, and Karthik Kashinath

D2335 |

EGU2020-10883

[Assessment of Predictive Uncertainty of Data-Driven Environmental Models](#)

Benedikt Knüsel, Christoph Baumberger, Marius Zumwald, David N. Bresch, and Reto Knutti

Group 3

D2336 |

EGU2020-9038

[How many proxy are necessary to reconstruct the temperature of the last millennium?](#)

Fernando Jaume-Santero, David Barriopedro, Ricardo García-Herrera, Sancho Salcedo-Sanz, and Natalia Calvo

D2338 |

EGU2020-5532

[A Vision for providing Global Weather Forecasts at Point-scale](#)

Timothy Hewson

D2339 |

EGU2020-3485

[Extended Range Arctic Sea Ice Forecast with Convolutional Long-Short Term Memory Networks](#)

Yang Liu, Laurens Bogaardt, Jisk Attema, and Wilco Hazeleger

Group 4

D2340 |

EGU2020-17748

[Deep learning for short-term temperature forecasts with video prediction methods](#)

Bing Gong, Severin Hußmann, Amirpasha Mozaffari, Jan Vogelsang, and Martin Schultz

D2341 |

EGU2020-1635

[Estimation of NO₂ and SO₂ concentration changes in Europe from meteorological data with Neural Network](#)

Andrey Vlasenko, Volker Matthias, and Ulrich Callies

Group 5

D2342 |

EGU2020-5574

[Predicting atmospheric optical properties for radiative transfer computations using neural networks](#)

Menno Veerman, Robert Pincus, Caspar van Leeuwen, Damian Podareanu, Robin Stoffer, and Chiel van Heerwaarden

D2343 |

EGU2020-13215

[Bare-earth DEM Generation in Urban Areas Based on a Machine Learning Method](#)

Yinxue Liu, Paul Bates, Jeffery Neal, and Dai Yamazaki

D2344 |

EGU2020-2135

[GPP and NEE estimation for global forests based on a deep convolutional neural network](#)

Wenjin Wu

Schedule of the session Wednesday 16:15–18:00

Group 1

D2346 |

EGU2020-2222

[Coastal to Abyssal Vertical Sediment Accumulation Rates Predicted via Machine-Learning: Towards Sediment Characterization on a Global Scale](#)

Giancarlo Restrepo, Warren Wood, and Benjamin Phrampus

D2347 |

EGU2020-12634

[Real-time Japanese nearshore wave prediction for one-week later using GMDH and global wave forecast data](#)

Sooyoul Kim, Keishiro Chiyonobu, Hajime Mase, and Masahide Takeda

D2348 |

EGU2020-19772

[Wave data prediction and reconstruction by recurrent neural networks at the nearshore area of Norderney](#)

Christoph Jörges, Cordula Berkenbrink, and Britta Stumpe

Group 2

D2350 |

EGU2020-15481

[Deep learning for monthly Arctic sea ice concentration prediction](#)

Tom Andersson, Fruzsina Agocs, Scott Hosking, María Pérez-Ortiz, Brooks Paige, Chris Russell, Andrew Elliott, Stephen Law, Jeremy Wilkinson, Yevgeny Askenov, David Schroeder, Will Tebbutt, Anita Faul, and Emily Shuckburgh

D2351 |

EGU2020-10366

[Deep Learning for Precipitation Estimation from Satellite and Rain Gauges Measurements](#)

Arthur Moraux, Steven Dewitte, Bruno Cornelis, and Adrian Munteanu

D2352 |

EGU2020-4824

[Necessary conditions for algorithmic tuning of weather prediction models using OpenIFS as an example](#)

Lauri Tuppi, Pirkka Ollinaho, Madeleine Ekblom, Vladimir Shemyakin, and Heikki Järvinen

Group 3

D2353 |

EGU2020-12601

[Neural Supermodeling](#)

Wim Wiegelerinck

D2354 |

EGU2020-19085

[Machine Learning for Cloud Masking](#)

Johan Sjöberg, Sam Jackson, Karel Adamek, Wesley Armour, and Jeyarajan Thiyaalingam

D2355 |

EGU2020-8492

[Mapping \(un\)certainty of machine learning-based spatial prediction models based on predictor space distances](#)

Hanna Meyer and Edzer Pebesma

Group 4

D2357 |

EGU2020-20177

[Deep neural networks to downscale ocean climate models](#)

Marie Déchelle-Marquet, Marina Levy, Patrick Gallinari, Michel Crepon, and Sylvie Thiria

D2358 |

EGU2020-17919

[Causal Discovery as a novel approach for CMIP6 climate model evaluation](#)

Kevin Debeire, Veronika Eyring, Peer Nowack, and Jakob Runge

D2359 |

EGU2020-20132

[Towards synthetic data generation for machine learning models in weather and climate](#)

David Meyer

Group 5

D2360 |

EGU2020-21329

[Multisensor crop yield estimation with machine learning](#)

Laura Martínez Ferrer, Maria Piles, and Gustau Camps-Valls

D2361 |

EGU2020-11263

[Deep reinforcement learning in World-Earth system models to discover sustainable management strategies](#)

Felix Strnad, Wolfram Barfuss, Jonathan Donges, and Jobst Heitzig