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Areas of Interest

- Polar low dynamics
- Mesoscale meteorology
- Atmospheric energetics
- Atmospheric boundary layer
- Extraterrestrial meteorology

Education

2014–Present PhD in Meteorology
Thesis title: **Dynamics and Predictability of Polar Lows**
School of Environmental Sciences
University of East Anglia
Supervisor: Ian A. Renfrew

2009–2014 Specialist Diploma in Meteorology
With Honours
Thesis title: **Idealised numerical modelling of polar mesocyclone dynamics**
Faculty of Geography
Lomonosov Moscow State University
Supervisor: Victor Stepanenko

Internships

Oct 2013 *University of Bergen*
Geophysical Institute
Bergen, Norway
Supervisor: Thomas Spengler

Jul 2012 *A.M. Obukhov Institute of Atmospheric Physics*
Laboratory of Climate Theory
Moscow, Russia
Supervisor: Alexey Eliseev

Publications

Peer-reviewed

1. Sergeev DE, Renfrew IA, and Spengler T. 2018. Modification of polar low development by orography and sea ice. *in prep.*
2. Sergeev DE, Renfrew IA, Spengler T, and Dorling SR. 2017. Structure of a shear-line polar low. *Quaterly Journal of the Royal Meteorological Society*, **143**(702): 12–26
3. Spengler T, Renfrew IA, Terpstra A, Tjernström M, Screen J, Brooks I, Carleton A, Chechin D, Chen L, Doyle J, Esau I, Hezel P, Jung T, Kohyama T, Lüpkes C, McCusker K, Nygård T, Sergeev DE, Shupe M, Sodemann H, and Vihma T. 2016. High Latitude Dynamics of Atmosphere-Ice-Ocean Interactions. *Bulletin of American Meteorological Society*, **97**(9): ES179–ES182
4. Eliseev AV, Sergeev DE. 2014. Impact of Subgrid Scale Vegetation Heterogeneity on the Simulation of Carbon Cycle Characteristics. *Izvestiya, Atmospheric and Oceanic Physics*, **50**(3): 259–270

Proceedings

1. Sergeev DE, Stepanenko VM. 2013. Numerical modelling of polar mesocyclones generation mechanisms. *International Conference "Turbulence, atmosphere and climate dynamics" dedicated to A.M. Obukhov*, **Selected papers**: 168–170
2. Sergeev DE, Zamyatina MY, Stepanenko VM. 2013. Thermal regime features of Kronotsky lake (in Russian). *Kronotsky State Natural Biosphere Reserve Proceedings*, **3**: 29–41
3. Sergeev DE, Stepanenko VM. 2012. Parameterization of mesoscale sensible heat and methane fluxes in the region of Western Siberia. *International Conference and Early Career Scientists School on Environmental Observations, modelling and Information Systems (ENVIROMIS-2012)*, **Selected papers**: 67–69

Conferences and Workshops

Oral presentations

Oct 2017 The influence of Svalbard orography and sea ice on polar low development
18th Cyclone Workshop
Sainte-Adèle, Canada

Apr 2017 Polar lows and how background environment can influence their development
Cambridge Earth Systems Science EnvEast Doctoral Alliance (CEEDA) Symposium
Cambridge, UK

Apr 2016 Structure of the shear-line polar low south of Svalbard
13th European Polar Lows Working Group (EPLWG) Workshop
Paris, France

May 2016 Structure of the shear-line polar low south of Svalbard
NORPAN kick-off meeting
Tokyo, Japan

Poster presentations

Jul 2015 **Structure and dynamics of a shear-line polar low during a cold-air outbreak over the Norwegian Sea**
Royal Meteorological Society Student Conference
Birmingham, UK

Mar 2015 **Structure and dynamics of a shear-line polar low during a cold-air outbreak over the Norwegian Sea**
Dynamics of Atmosphere-Ice-Ocean Interactions in the High Latitudes workshop
Rosendal, Norway

May 2014 **Numerical modelling of polar mesocyclones dynamics diagnosed by the energy budget**
European Geosciences Union (EGU) General Assembly
Vienna, Austria

Apr 2013 **Impact of subgrid-scale vegetation heterogeneity on results of climate model simulation of carbon cycle**
European Geosciences Union (EGU) General Assembly
Vienna, Austria

Apr 2013 **Numerical modelling of polar mesocyclones generation mechanisms**
European Geosciences Union (EGU) General Assembly
Vienna, Austria

Awards and Scholarships

2017 **Best Presentation Award**
Cambridge Earth Systems Science EnvEast Doctoral Alliance (CEEDA) Symposium

2016 **Travel Bursary**
WWRP/WCRP/Bolin Center Polar Prediction School

2015 **Travel Award**
Dynamics of Atmosphere-Ice-Ocean Interactions in the High Latitudes workshop

2014–2018 **Lord Zuckerman scholarship**
School of Environmental Sciences, University of East Anglia

2014 **Young Scientist's Travel Award (YSTA)**

European Geosciences Union (EGU) General Assembly

2014 **Russian Academy of Sciences Young Scientist Medal**
In the area of oceanology, atmospheric physics and geography

2009 **3rd place in the All-Russian Geography Olympiad**

2009 **1st place in the Lomonosov Geography Olympiad**

Grants

2014–2016 **Characteristics of the mesoscale atmospheric circulations in the Arctic and their influence on the atmosphere-ocean energy exchange**
Russian Foundation for Basic Research (RFBR) Grant

2013–2015 **Multiscale modelling of turbulent atmospheric flow above sea surface with inhomogeneous ice cover**
Russian Foundation for Basic Research (RFBR) Grant

2013–2015 **Developing and verification of the mesoscale sensible heat and tracers fluxes over hydrologically inhomogeneous surface**
Grant of the President of Russian Federation

Vocational training

Apr 2016 WWRP/WCRP/Bolin Center Polar Prediction School
Dec 2014 UK Met Office Unified Model Training
Sep–Dec 2011 Global Climate Change course

EnvEast DTP

Jun 2017 **Weather presenting course**
Jan 2017 **Raspberry Pi course**

On-line courses

MetEd Topics in Polar Low Forecasting
MetEd Arctic Meteorology and Oceanography
MetEd Skew-T Mastery
MetEd Principles of Convection: Buoyancy and CAPE
MetEd Using Scatterometer Wind and Altimeter Wave Estimates in Marine Forecasting
MetEd Polar Satellite Products for the Operational Forecaster: Microwave Analysis of Tropical Cyclones
MetEd How Mesoscale Models Work
MetEd Jet Streams
MetEd Downscaling of NWP Data
MetEd Satellite Feature Identification: Cyclogenesis
MetEd The Balancing Act of Geostrophic Adjustment
MetEd Introduction to Statistics in Climatology
MetEd Monitoring the Climate System with Satellites
Coursera High Performance Scientific Computing
INTUIT Parallel Programming Using MPI Technologies

Safety training

Feb 2017 **Level 1 First Aid for Field Work course**
Dec 2017 **Sea Survival course**

Fieldwork Experience

Aug 2012 **Field practice in meteorology**
Study of prevailing mesoscale processes via wind characteristic measurements and lake hydrothermodynamical modelling
Kronotsky National Reservation, Kamchatka pen., Russia

Jan–Feb 2012 **Field practice in meteorology**
Measurements of the convective boundary layer over the polynya
White Sea Biological Station, Karel Republic, Russia

Jun–Jul 2011 **Field practice in meteorology**

Basic field techniques in atmospheric sciences (atmosphere vertical structure, turbulence and radiative measurements)
Khibiny mountains, Murmansk region, Russia

Jan–Feb 2011 **Field practice in meteorology**
Micrometeorological measurements, ice-breeze modelling
White Sea Biological Station, Karel Republic, Russia

Jun–Jul 2010 **Field practice in geographical studies**
Basic training in meteorology, hydrology, geomorphology, soil science, biogeography, topography
Kaluga region, Russia

Teaching Experience

2015–Present **Teaching assistance**
University of East Anglia

- Modelling Environmental Processes
  Module organiser: Ian Renfrew
- Meteorology I
  Module organiser: Ian Refrew
- Meteorology II
  Module organiser: Adrian Matthews
- Numerical Skills for Scientists
  Module organiser: Claire Reeves
- Physical and Chemical Processes in Earth's System
  Module organiser: Parvadha Suntharalingam

Apr 2017 **Field course teaching assistance**
University of East Anglia

- Surface energy fluxes on Slapton Ley
  Module organiser: Ian Refrew
- Micrometeorology at Start Point
  Module organiser: Ian Refrew
- Dispersion on Slapton Ley
  Module organiser: Ian Renfrew

Membership in Professional Associations

2014–Present Royal Meteorological Society (RMetS)

Editorial Service

Acted as reviewer for Quarterly Journal of the Royal Meteorological Society

Vocational Experience

Jan 2018 Training course "Introduction to Python in Environmental Sciences"
Course instructor
University of East Anglia, UK

Nov 2016 Training course "Introduction to Python in Environmental Sciences"
Course leader
University of East Anglia, UK

2015–Present Python group coordinator
Managing an unofficial group of Python language users
University of East Anglia, UK

Mar 2015 **Rapporteur**
Dynamics of Atmosphere-Ice-Ocean Interactions in the High-Latitudes workshop
Rosendal, Norway

Jun–Jul 2014 **Professional translator**
Translation of documentation of meteorological equipment (En-Ru)

Retail and Consumer Merchandise “Meteomaster” (Moscow, Russia)

Aug–Sep 2013 **Weather Forecaster**
Forecast and Briefing Service
Main Aviation Meteorological Centre, Vnukovo Airport (Moscow, Russia)

Outreach

2015–Present **Contributor to SciSnack blogging platform**

- Polar Lows: What Fuels Arctic Hurricanes?
- Disastrous Disaster Movies
- Worldwide Weird Weather Words

Computer Skills

Operating systems	**Linux**, Unix, Windows
Computer Languages	**Python**, Fortran
Data visualisation	**Python**, MATLAB, NCL, Paraview
Parallel programming	MPI, OpenMP
Version control systems	Git, Subversion
Document preparation	LaTeX, Markdown
Web development	HTML, CSS

Languages

Russian	Native speaker
English	Fluent
French	Basic