

Sergej Zilitinkevich

PARTICIPATION IN CONFERENCES (last decade)

2000

3rd ERCOFTAC Conference on Mixing in Geophysical and Astrophysical Flows, University of Sheffield, UK, 12-14 April 2000. “Turbulent mixing in stably stratified boundary layers” ([invited lecture](#))

25th EGS General Assembly, Nice, France, 25-29 April 2000. (1) “Non-local transport in stably stratified geophysical boundary layers” ([solicited paper](#)). (2) “Application of an extended similarity theory for the stably stratified atmospheric surface layer in the weather prediction model HIRLAM” (V. Perov and S. Zilitinkevich, presented by V. Perov)

8th European Turbulence Conference, Barcelona, Spain, 27-30 June 2000. “Non-local turbulence in stably stratified boundary layers”

CARTUM Summer School, Bidston, United Kingdom, 31 July – 8 August 2000. “Stable boundary layers”, “Convective boundary layers” ([invited lectures](#))

Organized Vortical Motion as a Basis for Boundary Layer Control (International Workshop), Kiev, Ukraine, 19-22 September 2000. “Third-order transport due to internal waves and non-local turbulence in the stably stratified surface layer”

2001

26th EGS General Assembly, Nice, France, 25-31 March 2001. “Near-surface turbulent fluxes in stable stratification: calculation techniques for use in general circulation models” ([solicited paper](#), co-authors: V. Perov and J. King)

“The Stable Boundary Layer” – Royal Meteorological Society Meeting, Cambridge, United Kingdom, 25 April 2001. “Non-local features of the SBL”

International School on Statistical and Mathematical Applications in Economics, Finance and Insurance, Gurzuf, Crimea, Ukraine, 23-30 June 2001. “Evaluation of the quality of environment” ([invited lecture](#))

3rd CARTUM Summer School, Gregynog, Wales, United Kingdom, 15-20 July 2001. “How to calculate the depth of planetary boundary layers (PBLs) in operational models” ([invited lecture](#))

8th Scientific Assembly of IAMAS (International Association of Meteorology and Atmospheric Sciences), Innsbruck, Austria, 10-18 July 2001. “On the calculation of the height of stably stratified planetary boundary layers” ([invited lecture](#) by S. Zilitinkevich and A. Baklanov – presented by A. Baklanov)

Potsdam Sustainability Days – Contributions to Sustainability Science from Applied Mathematics and Software Engineering (Workshop at Potsdam Institute for Climate Impact

Research), Potsdam, Germany, 4-5 October 2001. “Boundary layers and turbulence in climate dynamics” ([invited lecture](#))

3rd International Symposium on Environmental Hydraulics (with a Special Theme in Urban Fluid Dynamics), Tempe, Arizona, USA, 5-8 December 2001. “Scale analysis and resistance laws for drainage flows in stable stratification”

2002

Conference on Current Efforts towards Advancing the Skill of Regional Weather Prediction: Challenges and Outlook, The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy, 17-19 April 2002. “Planetary boundary layers (PBLs): classical theory, recent developments and improved parameterisation” ([invited lecture](#))

27th EGS General Assembly, Nice, France, 21-26 April 2002. (1) “The effect of baroclinicity on the depth of neutrally stratified Ekman boundary layer” (co-author: E. Esau). (2) “Resistance laws for stable baroclinic boundary layers (co-authors: E. Esau, A. Baklanov and G. Djolov). (3) “Implementation of a new parameterisation of the surface turbulent fluxes for the stable stratification in NWP model HIRLAM (V. Perov, S. Zilitinkevich and K.-I. Ivarsson – presented by V. Perov). (4) “Generation of large-scale semi-organised structures in turbulent convection” (T. Elperin, N. Kleorin, I. Rogachevskii and S. Zilitinkevich, presented by I. Rogachevskii). (5) “Investigation of boundary-layer fine structure in arid regions (G. S. Golotsyn, I. G. Granberg, A. N. Doronina, S. S. Zilitinkevich, V. V. Smirnov and V. M. Ponomarev – poster presented by I. G. Granberg)

NATO Advanced Research Workshop “Air Pollution Processes in Regional Scale”, Halkidiki, Greece, 13-15 June 2002. “Modelling and Parameterisation on of Turbulent Transport in Stable Stratification” ([invited lecture](#))

9th European Turbulence Conference, Southampton, UK, 2-5 July 2002. “Generation of Large-scale Semi-organised Structures in Sheared Turbulent Convection” (T. Elperin, N. Kleorin, I. Rogachevskii and S. Zilitinkevich – poster presented by T. Elperin)

15th AMS Symposium on Boundary Layers and Turbulence, Wageningen, The Netherlands, 15-19 July 2002. “Baroclinic Ekman Layer” (co-author: I. Esau) “Generation of large-scale semi-organised structures in turbulent convection” (T. Elperin, N. Kleorin, I. Rogachevskii and S. Zilitinkevich – poster presented by I. Rogachevskii)

2nd Hiiumaa Symposium and Summer School “Marine Hydrodynamic and Ecosystem Modelling”, Hiiumaa, Estonia, 22-26 July 2002. “Atmospheric Boundary-layer Models” ([invited lecture](#))

11th International Biennial Conference on Physics of Estuaries and Coastal Seas, Hamburg, Germany, 17-20 September 2002. “The Influence of Different Parameterisations of Meteorological Forcing and Turbulence Schemes on Modelling of Eutrophication Processes in a 3-D Model of Estuary” (V. Maderich, O. Nesterov and S. Zilitinkevich – presented by V. Maderich)

2003

27th EGS-AGU-EUG Joint Assembly, Nice, France, 6-11 April 2003. “Scaling laws and turbulence closures for stable boundary layers” ([solicited paper](#); co-authors: I. Esau, A. Baklanov and G. Djolov; CD-ROM “Geophysical Research Abstracts”, Volume 5, 2003; presented by A. Baklanov)

International Symposium on High Rayleigh Number Convection, Leiden, The Netherlands 10-19 June 2003. “Formation of large-scale coherent structures in turbulent convection” (T. Elperin, N. Kleorin, I. Rogachevsky and S. Zilitinkevich; Presented by T. Elperin)

International Symposium on Shallow Flows, Delft, The Netherlands, 16-18 June 2003. “Formation of large-scale coherent structures in turbulent convection” (T. Elperin, N. Kleorin, I. Rogachevsky and S. Zilitinkevich; Presented by T. Elperin)

GEWEX Atmospheric Boundary Layer Study (GABLS) Workshop, Mallorca, Spain, September 22-25, 2003. “Geophysical stable boundary Layers - non-local theory and parameterisation” ([invited lecture](#)).

World Climate Change Conference, Moscow, Russia, 29 September - October 2003. “Modelling and prediction of urban climate” (co-authors: A. Baklanov, R. Bornstein, J.C.R. Hunt and P. Mestayer)

2nd Sustainable Development Meeting, Joint Research Centre – Ispra, Italy, 8 October 2003. “New precepts for modelling of urban environment” ([invited presentation](#))

Advanced Study School “Non-linear Processes in Marine Sciences”, Hageri, Estonia, 12-19 October 2003. 6-hour lecture course “Geophysical turbulent boundary layers”

Baltic HIRLAM Workshop on atmospheric fine scale and boundary-layer modelling, St.Petersburg, Russia, 16-20 November 2003. “Current problems of stable boundary layer modelling” ([invited lecture](#)).

2004

Sodankylä Seminar on Stable Boundary Layers. Sodankylä, Finland, 30-31 August 2004, Finnish Meteorological Institute. S. Zilitinkevich: “What do we need from experiments to better model physical processes in stable boundary layers?” ([invited lecture](#))

Turbulence and Waves Conference, Lighthill Institute of Mathematical Sciences, University College London, 13-15 September 2004. S. Zilitinkevich “Resistance and heat transfer laws for stable and neutral planetary boundary layers” ([invited lecture](#), co-author I. N. Esau).

4th Annual Meeting of the European Meteorological Society, Nice, France, 26-30 September 2004. Session: Boundary-layer Physics in Weather and Climate Prediction (S. Zilitinkevich – Convener of the Session). Presentations by S. Zilitinkevich: (1) “Non-local features of the atmospheric long-lived stable boundary layers” (co-authors: A. Baklanov, I. N. Esau and A. S. Petrosyan); (2) “The nature and the role of semi-organised structures in the atmospheric convective boundary layers” (co-authors: J. C. R. Hunt, A. A. Grachev, I. N. Esau, T. Elperin, N. Kleorin, I. Rogachevskii and A. S. Petrosyan); (3) “Parameterization of urban atmospheric sub-layer in meteorological models: FUMAPEX project achievements” (co-authors: Baklanov

A., Mestayer P., Clappier, Joffre S., Mahura A. and Nielsen N. W. – presented by the first author A. Baklanov).

6th Plinius Conference on Mediterranean Storms (arranged by European Geosciences Union). Mediterranean Sea (Genoa – Naples – Palermo – Palma de Mallorca – Barcelona – Marseille – Genoa), 17-24 October 2004. S. Zilitinkevich: “Atmospheric boundary layers in storms: advanced theory and modelling applications” ([solicited paper](#), published in “Advances in Geosciences”, co-author I. N. Esau).

4th International Symposium on Environmental Hydraulics (ISEN) and 14th Congress of the Asia and Pacific Division of the International Association for Hydraulic Engineering and Research (IAHR-APD), Hong Kong. 15-18 December 2004. S. Zilitinkevich: “Stably stratified turbulent boundary layers: the nature, the theory and possible applications to sediment transport problems” (co-authors: I. N. Esau and A. Baklanov).

International Workshop “Wall-Bounded and Free-Surface Turbulence and its Computation. National University of Singapore, 20-23 December 2004. S. Zilitinkevich: “Non-local features of stably stratified turbulent boundary layers”, “The influence of large convective eddies on the surface layer turbulence” ([invited lectures](#)).

2005

All-Russian Conference on Climate Change in XXI Century: Modern Trends, Prognostic Scenarios, and Impact Assessments, St.Petersburg, Russia, 16-18 February 2005. S. Zilitinkevich: “Non-local features of atmospheric stable boundary layers” (co-authors: I. Esau and A. Baklanov).

First CliC International Science Conference (Climate and Cryosphere), Beijing, China, 11-15 April 2005. S. Zilitinkevich: “Scaling analysis and heat/mass transfer laws for turbulent regimes over openings in the ice cover” (co-author: I. N. Esau).

Workshop on Interdisciplinary Aspects of Turbulence, Schloss Ringberg, Tegernsee, Germany, 18-22 April 2005. S. Zilitinkevich – member of the Organising Committee, “Non-local features of turbulence in stably stratified geophysical boundary layers” ([invited lecture](#), 21.04.05).

Conference on “Current Efforts toward Advancing the Skill of Regional Weather Prediction. Challenges and Outlook”, The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy, 20-22 April 2005. S. Zilitinkevich: “Physical grounds for improved parameterization of stable boundary layers in atmospheric models” ([invited lecture](#), 22.04.05)

EGU04 General Assembly. Session AS2.03: Basic studies of the atmospheric and oceanic boundary layers”, Vienna, Austria, 25-29 April 2005. S. Zilitinkevich: (i) “The influence of large convective eddies on the surface layer turbulence” (co-authors: Hunt, J.C.R, Grachev, A.A., Esau, I.N., Lalas, D.P., Akylas, E., Tombrou, M., Fairall, C.W., and Fernando, H.J.C.; 25.04.05); (ii) “Parameter phase space of idealized shear-driven planetary boundary layer” (by I. Esau and S. Zilitinkevich; presented by I.N. Esau; 25.04.05)

28th *International Conference on Alpine Meteorology (ICAM)*, Zadar, Croatia, 23-27 May 2005. S. Zilitinkevich: “The effect of large eddies on the convective heat/mass transfer over complex terrain: Advanced theory and its validation against experimental and LES data” ([solicited paper](#); co-authors: Hunt, J.C.R., Grachev, A.A., Esau, I.N., Lalas, D.P., Akylas, E., Tombrou, M., Fairall, C.W., Fernando, H.J.C., Baklanov, A.A., Joffre, S.M.; 23.05.05)

Summer School on “Planetary Boundary Layers over Complex and Vegetated Surfaces”, Sodankylä, Finland, 4-14 June 2005. S. Zilitinkevich: course of lectures “Planetary boundary layers over complex surfaces” (seven 45-minute lectures, 4-9.06.2005; materials available on the school web site):

Pt. 1: Introduction

1. PBLs over complex and vegetated surfaces – key problems and the structure of the school.
2. Basic concepts and physical mechanisms of the interaction of air flows with rough surfaces.

Pt. 2: Physical grounds for improved parameterization of stable boundary layers in climate and numerical weather prediction models.

3. How the surface fluxes are calculated in current operational models?
4. Diagnostic and prognostic formulations for the height of the stable boundary layers.
5. Resistance and heat/mass transfer laws: old theory revised and re-evaluated.

Pt. 3: Convective heat/mass transfer over rough and complex surfaces.

6. The effect of large convective eddies on the surface layer turbulence.
7. Analytical model and parameterization of the heat/mass transfer over openings in the ice covered ocean.

Helsinki Urban Modelling Workshop – Use of Helsinki Mesoscale Testbed Data in Urban Atmospheric Modelling, Helsinki, Finland, 15-16 June 2005; S. Zilitinkevich: [invited lecture](#) “Urban PBLs: some recent works towards their improved parameterization”.

5th *Annual Meeting of the European Meteorological Society (EMS)*, 12-16 September 2005, Utrecht, the Netherlands (S. Zilitinkevich: convener of the 2-day session “Boundary-layer physics in weather, climate and air pollution modelling”). Presentations: (i) S. Zilitinkevich and E. Esau “Heat and mass transfer laws for turbulent convective flows in the atmosphere over leads in ice covered oceans”; (ii) T. Elperin, [N. Kleeroin](#), I. Rogachevskii, and S. Zilitinkevich “New turbulence closure equations for stable boundary layers: return to Kolmogorov (1941)”. Abstracts on CD “EMS Annual Meeting Abstracts” Volume 2, 2005. ISSN 1812-7053.

NATO Advanced Research Workshop on Air, Water and Soil Quality Modelling for Risk and Impact Assessment, Tabakhmela (Tbilisi), Georgia, 16-20 September 2005; S. Zilitinkevich: [invited lecture](#) “Atmospheric convection over complex terrain and urban canopy: non-local ventilation mechanisms and application to pollution-dispersion and air-quality problems”. Abstract: Zilitinkevich, S. S., Hunt, J. C. R., Grachev, A. A., Esau, I. N., Lalas, D. P., Akylas, E., Tombrou, M., Fairall, C. W., Fernando, H. J. S., Baklanov, A., Joffre, S. M., in: *Air, Water and Soil Quality Modelling for Risk and Impact Assessment*, NATO / OTAN Advanced Research Workshop, Tabakhmela, Georgia, 2005, p. 48.

International Conference / Workshop “Climate change and environment”, St.Petersburg, Russia, 6-9.12.2005; S. Zilitinkevich: [invited lecture](#) “Self-reinforcement of convection by

large-scale coherent structures and its role in climate system” (abstract available on the conference web site).

IV Brazilian Workshop on Micrometeorology, Santa Maria, Brazil, 14-16 December, 2005; S. Zilitinkevich: [invited lecture](#) “The Effect of Large-scale, Semi-organised Structures on the Convective Heat/Mass Transfer” (abstract available on the conference web site).

2006

Workshop “Boundary layer physics and the project ATMOSFERA”, ENEA, Rome, Italy, 13-17.02.2006; 2 [invited lectures](#) on planetary boundary layers (PBLs) in air pollution modelling and forecasting: “Stable PBLs” and “Convective PBLs”.

NATO Advanced Research Workshop “Atmospheric Boundary Layers: Modelling and Application to Environmental Security”, Dubrovnik, Croatia, 18-22 April 2006 (S. Zilitinkevich: a member of the Organising Committee); presentations (materials available on the conference web site):

- (i) S. Zilitinkevich, T. Elperin, N. Kleeorin, I. Rogachevskii, I. Esau and T. Mausitsen “Turbulent energies and Richardson numbers in stably stratified sheared flows” ([key lecture](#));
- (ii) S. Zilitinkevich, and I. Esau “Integral features of atmospheric stable boundary layers: theory and LES” (regular presentation given by Esau);
- (iii) A. Eidelman, T. Elperin, N. Kleeorin, I. Rogachevskii, and S. Zilitinkevich “Cells and roles in convective boundary layers: observations, theory and laboratory experiments” (regular presentation given by Rogachevskii);
- (iv) S. Zilitinkevich, T. Elperin, N. Kleeorin, I. Rogachevskii “A minimal turbulence closure model for stably stratified geophysical boundary layers” (regular presentation given by Kleeorin);
- (v) S. Zilitinkevich, I. Mammarella, A. Baklanov, and S. Joffre “On the stability dependence of the roughness length for very rough natural surfaces” (regular presentation given by Mammarella).

6th Annual Meeting of the European Meteorological Society (EMS), September 2006, Lyublyana, Slovenia. S. Zilitinkevich – convener of the Session AW2.1.

SABLE Workshop. Sedona, AZ, USA (Arizona State University / Army Research Lab). Nov. 12-16, 2006. S. Zilitinkevich: a member of the Organising Committee; S. Zilitinkevich: key lecture “Modeling stable boundary layers”.

Planetary Boundary Layer (PBL) Workshop. San Jose State University, California, USA, 20-23 November 2006. Sergej Zilitinkevich – two [invited lectures](#):

- (i) Turbulence in stable boundary layers;
- (ii) PBL modules in numerical weather prediction models.

International Workshops “Geophysical Fluid Dynamics & Scalar Transport in the Tropics”, 18-27.12.2006, National Uni. Singapore, Inst. Mathematical Sciences. (<http://www.ims.nus.edu.sg/Programs/geophysical/activities.htm#section4>), [Invited lectures](#) by Sergej Zilitinkevich ([20 - 21 Dec 2006](#))

- (i) “Turbulence closure problem for stably stratified flows”

- (ii) “The influence of large, semi-organised eddies on the convective heat / mass transfer: revision of the classical theory and environmental modelling applications”
- (iii) “High resolution atmosphere – ocean – water ecosystem modelling for coastal zones” (authors: Rein Tamsalu & Sergej Zilitinkevich)

2007

IPY-CARE Workshop: Climate of the Arctic and its role for Europe, 13-14.02.07, Nansen Environmental and Remote Sensing Center, Bergen, Norway. Sergej Zilitinkevich: “Extreme features of the atmospheric boundary layers and their effects on weather and climate in Polar regions”

Conference “*From an experience in Rome to the implementation of ATMOSFERA in Milan: a project for air quality in big cities*”, 23 April 2007, Rome, Campidoglio.

Invited lectures:

- (i) Sergej S. Zilitinkevich “*New developments in BLM and prospects to improve the ENEA model system ATMOSFERA*”
- (ii) Alexander A. Baklanov (DMI, DK), Sergej S. Zilitinkevich (University of Helsinki & FMI, FI), and the FUMAPEX team “*Integrated Systems for Forecasting Urban Meteorology, Air Pollution and Population Exposure (EU FP5 FUMAPEX 2003-2006, Prospects for the ENEA model system ATMOSFERA)*”,
- (iii) Sergej S. Zilitinkevich “*Conclusions from this Conference*”

Workshop on Model Urbanization Strategy, Exeter, UK, 3-4 May 2007. Invited lecture: Sergej Zilitinkevich, I. Mammarella, A. A. Baklanov, S. M. Joffre: “The effect of stratification on the aerodynamic roughness length”

International course on Boundary-layer Physics, 27.05-01.06 University of Helsinki / FMI, Finland. Sergej S. Zilitinkevich: Seven 45-min lectures (see <http://netfam.fmi.fi>, <<http://netfam.fmi.fi>> go to Workshops and find the PBL course link to presentations).

ARENA Workshop on "Site testing at Dome C", Rome, Italy June 11-13. 2 invited lectures by Sergej S. Zilitinkevich (Presentations at: <http://herschel.ifs-roma.inaf.it/arena/talks.htm>; workshop page: <http://herschel.ifs-roma.inaf.it/arena/>)

International (UK-Russian) Workshop “*Keeping It Cool*”, 25-27 June 2007, Polar Climate Research Programme, St.Petersburg, Russia, Russian State Hydrometeorological University. Sergej Zilitinkevich: “Atmospheric boundary layer and climate change: why Polar Regions are so sensitive to global warming?”

Summer School “*Mesoscale Meteorology and Predictability*” organised by the University of Helsinki, 19-25.08.07, Hyytiälä Forestry Field Station, Finland. Sergej Zilitinkevich: 1.5-hour [invited lecture](#) “New developments in physics of stable atmospheric boundary layers” (21.08.07).

7th *French Congress on Mechanics*. Section “Stratified Rotating Flows” 29.08-01.09.07 Grenoble, France. Sergej Zilitinkevich: [invited lecture](#) (on 30.08.07) “Stably stratified atmospheric boundary layers”

International Workshop *Physical Processes in Natural Waters 2007* (PPNW-2007), 3-6.09.07 (<http://www.io-warnemuende.de/phy/Workshops/ppnw/hotels.php>), Rostock-Warnemuende, Germany. Sergej Zilitinkevich: [invited lecture](#) (05.09.07) “A minimal energy- and flux-budget (EFB) turbulence closure for stably stratified sheared flows”.

International summer school “*Waves and Coastal Processes*”, Tallinn, Estonia, 25.08-09.09.2007. Sergej Zilitinkevich: [two 45-minute lectures](#) on “Air-sea interaction” (8.09.07).

NIERSC / SPB State University (SPbSU) / NERSC – International Summer School 2007 on “High Northern latitude Climate”, 9-12.09.07; SZ: [invited lecture](#) on 11.09.07 “Polar atmospheric boundary layer: specific features and the role in weather and climate”.

7th Annual Meeting of European Meteorological Society (EMS), 1-5 October 2007, San Lorenzo de El Escorial, Spain. <http://meetings.copernicus.org/ems2007/>, SESSION AW2.1 S. Zilitinkevich: "Boundary-layer physics and parameterizations in weather and climate forecasts" S. Zilitinkevich and I. Esau “Similarity theory and calculation of turbulent fluxes at the surface” (solicited presentation), SZ – convener of Session AW2.1. Abstract published in CD: 7th Annual Meeting of the European Meteorological Society and the 8th European Conference on Applied Climatology 1-5 October 2007, San Lorenzo de El Esocial, Spain. Vol. 4, 2007. ISSN 1812-7053.

2008

General Assembly of the European Geosciences Union (EGU 2008), 13-18 April 2008, Vienna, Austria. Presentations:

Sergej S. Zilitinkevich, Ivan Mammarella, Alexander Baklanov, and Sylvain M. Joffre: The effect of stratification on the aerodynamic roughness length and displacement height (Abstract: EGU2008-A-12273; <http://meetings.copernicus.org/egu2008/>);

A. Belotserkovsky, I. Bashmakova, G. Golitsyn, I. Granberg, S. Dobrolubov, L. Karlin, N. Kasimov, A. Kislov, A. Petrosyan, R. Room, N. Serditova, S. Stepanenko, S. Zilitinkevich: Round table discussion on “Development of competency-based two-level curricula in Meteorology (TEMPUS JEP 26005-2005 COMBAT-METEO)” (Abstracts EGU2008-A-12279; <http://meetings.copernicus.org/egu2008/>)

VKI Lecture Series “*Atmospheric Boundary Layer Flows in Air Pollution Modelling*”, 19-23 May 2008, The von Karman Institute for Fluid Dynamics (VKI), Brussels, Belgium. S. Zilitinkevich: “Stably and neutrally stratified atmospheric boundary layers” and “Convective atmospheric boundary layers” ([four invited lectures](#))

18th AMS Symposium on Boundary Layers and Turbulence, 9-13 June 2008, Stockholm, Sweden.

Oral presentations:

Sergej S. Zilitinkevich and Igor N. Esau: Similarity theory and parameterization of the stably stratified atmospheric boundary layers

Sergej Zilitinkevich, University of Helsinki, Helsinki, Finland; and I. Mammarella, A. Baklanov, and S. Joffre: The effect of stratification on the aerodynamic roughness length and displacement height

Poster:

Janis Rimshans, T. Esau, S. Zilitinkevich, and S. Guseynov: Analytical-numerical solution for the one-dimensional PBL

Abstracts published in the Symposium web site

<http://www.ametsoc.org/MEET/fainst/200818BLT.html>

Finnish-Russian Cooperation Days at Kumpula Campus, Finnish Meteorological Institute (FMI), 12-13.06.08. S. Zilitinkevich: chair of the Organising Committee, presentation of TEMPUS JEP 26005.

International Summer School “*Integrated Modelling of Meteorological and Chemical Transport Processes / Impact of Chemical Weather on Numerical Weather Prediction and Climate Modelling*”, 7-15 July 2008, Zelenogorsk, Russia. S. Zilitinkevich: member of the Organising Committee; [invited lecture](#) “Atmospheric Boundary layers – physics and parameterization”

International Seminar “*Modern Problems of Science and Education in meteorology and Hydrophysics*” (TEMPUS-26005), 7-17.09.08, Foros, Ukraine. S. Zilitinkevich – convener; presentations: Current status of TEMPUS JEP 26-005 “COMBAT-METEO”; “On the stability dependence of the aerodynamic roughness length”

International Conference “*Mesoscale Meteorology and Air Pollution*” in Commemoration of the Late Professor Lev Gutman and His Outstanding Contribution to Theoretical Mesometeorology, 15-17 September 2008, Odessa State Environmental University, Odessa, Ukraine (see conf.osenu.org.ua; login: conf_member, pswd: MMAAP).

SZ – Chair of the International Programme Committee; presentations:

Zilitinkevich, S. S., Elperin, T., Kleeorin, N., Rogachevskii, I., Esau, I., Mauritsen, T., and Miles, M. W. “Turbulent energetics in the stably stratified geophysical flows and the problem of critical Richardson number”;

Zilitinkevich, S. S., Elperin, T., Kleeorin, N., L’vov, V., and Rogachevskii, I. “Internal gravity waves in the turbulence closure problem for the stably stratified sheared flows”.

On 26.09.08 SZ gave by phone an interview (about the conference) to Radio of Odessa.

14th Cyclone Workshop, 21-26 September 2008, Far Hills Inn and Conference Center, Val Morin, Quebec, Canada. David M. Schultz and Sergej S. Zilitinkevich “Why do cold fronts move faster than warm fronts?” (presented by D. Schultz)

8th Annual Meeting of the European Meteorological Society (EMS) / 7th ECAC, 29 September – 03 October 2008, Amsterdam, the Netherlands. S. Zilitinkevich – Convener of the Session AW8 Boundary-layer physics and parameterizations in weather and climate forecast

ICTP Fall Colloquium on the Physics of Weather and Climate: Regional Weather Predictability and Modelling, Trieste, Italy, 29 September – 10 October 2008. [Invited lectures:](#)

S. Zilitinkevich “Physic and parameterization of atmospheric stable boundary layers” (invited lecture, 3.10.2008);

S. Zilitinkevich et al.: The effect of stratification on the roughness length and displacement height (9.10.2008)

International Meeting: “Biferno Valley: Atmosphere and Fluvial Environment” (Regione Molise / ENEA), Termoli, Italy, 7.10.2008.

S. Zilitinkevich: “A sight on air pollution in industrial districts” ([invited lecture](#));

S. Zilitinkevich: an interview to the Italian TV

2nd ARENA Workshop on Interferometry at Dome C, European Southern Observatory (ESO) and Max Planck Institute for Plasma Physics (IPP), Garching (Munich), Germany, October 13-14, 2008. S. Zilitinkevich “Modelling the ground layer” ([invited presentation](#))

International Conference “*Atmospheric physics, climate and health*” Kislovodsk, Russia, 6-10 October 2008; S. Zilitinkevich – [member of the Organising Committee](#).

“*Geography at the beginning of the 21st century*” (Conference devoted to the 70th Anniversary of the Faculty of Geography of the Lomonosov Moscow State University), Moscow, Russia, 22-24 October 2008. S. Zilitinkevich: [two invited lectures](#) for students: “On the stability dependence of the roughness length and displacement height” and “Organised structures and their effect on the convective heat/mass transfer law”

“*New opportunities for Finnish-Japanese cooperation in urban land-atmosphere and air-quality research*” (Finnish-Japanese Seminar), Helsinki, Finland, 24-26 November 2008 (www.ileaps.org); S. Zilitinkevich “The effect of stratification on roughness length and displacement height” ([invited lecture](#))

2009

89th Annual Meeting of the American Meteorological Society / 8th Symposium on the Urban Environment, Phoenix, Arizona, USA, 11-15 January 2009 (<http://ams.confex.com/ams/publish.cgi>); Zilitinkevich, S.S., Mammarella, I., Baklanov, A., and Joffre, S. M. “The effect of stratification on the aerodynamic roughness length and displacement height”

EGU General Assembly 2009, Vienna, Austria, 19-24 April 2009 (<http://meetings.copernicus.org/egu2009/>); Esau I. and Zilitinkevich S., 2009: *Atmospheric planetary boundary layer feedback in climate system and triggering of climate change at high latitudes*. Geophysical Research Abstracts, Vol. 11, EGU2009-0, 2009 (EGU General Assembly 2009)

“*7th International Conference on Air Quality Science and Applications*”, Istanbul, Turkey, 24-27 March 2009. (www.airqualityconference.org). Zilitinkevich, S.S., and Esau, I.N. “Planetary boundary layer feedback in climate system”; [also Zilitinkevich, S.S., Mammarella, I., Baklanov, A.A., and Joffre, S.M., 2009: The effect of stratification on the aerodynamic roughness length and displacement height. *Proceedings of Short Papers*, pp. 52-55 (published in the Proceedings – CD and web site)].

7th *International Conference on Urban Climate (ICUC-7)*, Yokohama, Japan, 29 June - 3 July 2009 (<http://www.ide.titech.ac.jp/~icuc7>) S.S. Zilitinkevich, I. Mammarella, A.A. Baklanov, and S.M. Joffre: “The effect of stratification on the urban roughness length and displacement height”

International Conference “*Marine Hydrophysics: Past, Present and Future*” (80th Anniversary of the Marine Hydrophysics Institute of the National Academy of Sciences of Ukraine), 8-10 September 2009, Sevastopol, Ukraine. S.S. Zilitinkevich – member of Organising Committee.

Annual Meeting of European Meteorological Society (EMS), Toulouse, France, 28 September – 2 October 2009 http://www.emetsoc.org/annual_meetings/annual_meetings_2009.php
SZ: Convener of Session AW8 “Boundary-Layer Physics and Parameterization in Weather and Climate Forecasts” and co-convener of Session AW14 “How to Determine the Atmospheric Boundary Layer Height from Measurement and Model Data?”

Presentations at AW8:

S. Zilitinkevich and I. Esau “Planetary boundary layer feedback in climate system”
S. Zilitinkevich “Planetary boundary layer – physics, modelling and role in Earth system: summary of new ERC grant (2009-2013)”

Presentations at AW14:

S. Zilitinkevich “What do we know and what is still questionable about the stable PBL height?”
A.A. Baklanov, S. Joffre, A. Kuchin, S. Mahura, M. Pringer, and S. Zilitinkevich ”The mixing height in urban areas – recent experimental and modelling results”

Presentations at Session CE4 “Education and Sharing Knowledge” (convener Tomas Halenka)

A. Belotserkovsky, I. Bashmakova, V. Ivanov, L. Karlin, A. Petrosyan, R. Room, N. Serditova, S. Tyuryakov, and S. Zilitinkevich “Development of competency-based two-level curricula in meteorology (TEMPUS JEP 26005 COMBAT-METEO)”
Abstracts published at: EMS & ECAM 2009, Toulouse, France, “Abstracts and Programme”

International Conference on Planetary Boundary Layers and Climate Change, 26-28 October 2009, Kirstenbosch Botanic gardens, Cape Town, South Africa.

S. Zilitinkevich: member of Organising Committee;

Invited lectures:

S. Zilitinkevich “On turbulence closure problem for geophysical stably stratified flows”
S. Zilitinkevich “Planetary Boundary Layers – Physics, Modelling and Role in Earth Systems: a new EC FP7 project (2009-2013)”

International Conference “Global Climate Change and Mechanisms of Adaptation to It”, 10-11 November 2009, Moscow, Russia

Invited paper:

S.S. Zilitinkevich “Planetary boundary layers: physics, modelling and role in Earth system” (Non-peer-reviewed publication: S.S. Zilitinkevich “Planetary boundary layers: physics, modelling and role in Earth system”. In: Abstracts. *International Conference “Global Climate Change and Mechanisms of Adaptation to It”*, 10-11 November 2009, Moscow, Russia, p. 84)

International Conference “Air Quality and Advection-Diffusion: for Environmentally Sustainable Industrial Development”, Palazzo Marini, Rome, Italy, 30.11.09

S. Zilitinkevich: gave 20 minute invited presentation “Conclusions from this Conference” (also chaired a session; and gave interview to Italian TV)

2010 ([6 invited presentations; organisation of 3 international conferences](#))

International Conference “Multi-phase systems: World Ocean, Nature, Humankind, Society and Technology”. 15-18 June 2010, Moscow, Russia. S. Zilitinkevich: “Geophysical turbulence and planetary boundary layers: nature, modelling and role in system atmosphere-ocean-biosphere” ([invited presentation](#)).

International Workshop “Air-Sea Interaction”, 5-10 July 2010, Marine Hydrophysical Institute NAS UA, Katsiveli, Crimea, Ukraine. S. Zilitinkevich – member of the Organising Committee.

S.S. Zilitinkevich “The sea-surface roughness length for scalars”; “The stability dependence of the roughness length and displacement height”; “The energy- and flux-budget turbulence closure model for stably stratified geophysical flows” ([invited lectures](#))

IV International Conference FNR-2010 “Frontiers of Nonlinear Physics”. *Proceedings*, Nizhny Novgorod – St. Petersburg, Russia, July 13-20, 2010 (www.fnp.sci-nnov.ru) S.S. Zilitinkevich, T. Elperin, N. Kleorin, I. Rogachevskii and I. Esau “Energy- and flux-budget (EFB) turbulence closure model for stably stratified geophysical flows” ([invited plenary lecture](#)).

S.S. Zilitinkevich chaired Session TS3 “Nonlinear Problems in Geosciences”.

3rd Conference “Basic Problems of Water and Water Resources”, 24-28 August 2010, Barnaul, Russia (<http://www.iwep.ru/ru/conf/index.html>)

S.S. Zilitinkevich, T. Elperin, N. Kleorin, I. Rogachevskii, I. Esau and R. Kouznetsov “Turbulence closure problem for stably stratified geophysical flows: theory and prospects for hydrological modelling” ([invited lecture](#))

S.S. Zilitinkevich: member of the Conference Scientific Committee; chaired the session “Actual problems of hydrology, hydro-physics, hydro-chemistry and ecology”

10th Annual meeting of the European Meteorological Society (10th EMS / 8th ECAC), Zurich, Switzerland, 13-17 2010; Session AW8 “Boundary-layer physics and parameterizations in weather and climate models” (15-16.09.2010); Convener: S. Zilitinkevich, Co-Conveners: A.S. Petrosyan

Link: <http://meetingorganizer.copernicus.org/EMS2010/session/3669>

http://meetingorganizer.copernicus.org/EMS2010/oral_programme/3669

http://meetingorganizer.copernicus.org/EMS2010/poster_programme/3669

Zilitinkevich S.S., Elperin T., Kleorin N., Rogachevskii I., Esau, I., Kouznetsov, R., “Turbulent closure for stably stratified flows: local and non-local formulations”

Bashmakova I., Belotserkovsky A., Karlin L., Petrosyan A., Serditova N., and Zilitinkevich S., Round table discussion “Development of qualification framework in meteorology (TEMPUS QUALIMET)”

Abstracts available in: *Presentations & Summary Session Reports 10th EMS Annual Meeting / 8th European Conference on Applied Climatology (ECAC)*, September 2010 in Zürich, Switzerland (http://www.emetsoc.org/annual_meetings/presentations_2010.php)

International Arctic Forum “Arctic – the Territory of Dialogue”, Russian Geographical Society / Moscow State University, Moscow, 22-23 October 2010. S.S. Zilitinkevich: invited participant.

Conference on Creating the Programme of the International Polar Decade, Sochi, Russia, 4-7 October 2010. S.S. Zilitinkevich “Interaction of geospheres in Polar regions”

Advisory-Council at the Presidium of the Russian Academy of Sciences – Seminar Series “*Possibilities of prevention of climate change and its negative consequences: the Kyoto Protocol problem*”. 26.11.2010, Moscow, Russia; S.S. Zilitinkevich “Geophysical turbulence and planetary boundary layers as climate-change regulators” ([invited presentation](#))

International Conference “Air quality: new methods, new tools, new system of management” (International experience in industrial area of Termoli, Molise), Rome, Italy, 29 November 2010 (<http://meteodiffusivita.vallebiferno.enea.it/>, www.cobis.it). S.S. Zilitinkevich, M.C. Mammarella, H.J.S. Fernando, L. Petracca, V. Costigliola, A. Ferroni, H. Kambezidis “How to look forward? Possible dialogue between science, industry and territory” ([invited presentation](#))

2011 ([9 invited presentations / lectures; organisation of 5 international conferences](#))

Finland – Russia Geoscience Days in Helsinki, 16-18 March 2011, Helsinki, Finland. Host institutions: Finnish Meteorological Institute, Academy of Finland, University of Helsinki. S. Zilitinkevich: Chair of Organising Committee; lecture: “Boundary layers as coupling instruments in climate system”.

2nd International Seminar “Atmosphere-Hydrosphere Interaction”, 25-26.03.2011, Nizhny Novgorod, Russia; website: <http://www.iapras.ru/news/news81.html>. S. Zilitinkevich: “Turbulent boundary layers air-sea coupling agents” ([invited lecture](#))

NATO Advanced Research Workshop “Climate Change, Human Health and National Security”, 28-30 April 2011, Dubrovnik, Croatia; website <http://www.nd.edu/~dynamics/NATOWorkshop.htm>, <http://www.nd.edu/%7Edynamics/NATOWorkshop.htm> S.S. Zilitinkevich “Atmospheric boundary layers – feature controlling air quality and human health” ([keynote address](#))

International Workshop “Integration of Geospheres in Earth Systems: Modern Queries to Environmental Physics, Modelling, Monitoring & Education”, 30.04-3.05.2011, Dubrovnik, Croatia (websites <http://pbl-pmes.fmi.fi/>, <http://qualimet.net/>, <http://megapoli.info>, http://www.geogr.msu.ru/news/news_detail.php?ID=2288)

S.S. Zilitinkevich – member of Organising Committee;

S.S. Zilitinkevich “Turbulence and planetary boundary layers as coupling parts of the climate machine” ([general presentation](#))

Eidelman, A., Elperin, T., Kleerorin, N., Rogachevsky, I., and Zilitinkevich, S.S. “Turbulent convection and coherent structures: theory and experiments”

International Conference “Climate Changes in Polar and Sub-polar Regions” 17-19.05.2011, Moscow, Russia (website <http://www.ifaran.ru/science/conferences/Polar.html>).

S.S. Zilitinkevich – member of Scientific Programme Committee

S.S. Zilitinkevich “Turbulent boundary layers in the Polar climate system”.

International Seminar “*Black Sea as Imitational Model of the Ocean*”, 30-31.05.2011, Kiev, Ukraine, Presidium of National Academy of Sciences of Ukraine
S.S. Zilitinkevich “Turbulence and boundary layers as air-sea coupling agents” ([invited talk](#))

Guest-lecture Programme of the Southern Centre of Russian Academy of Sciences, Rostov on Don, 1 July 2011

S.S. Zilitinkevich “Geophysical turbulence and boundary layers: coupling agents linking the atmosphere, hydrosphere and biosphere” ([invited lecture](#))

2nd International Young Scientists Summer School (YSSS-2011) “Integrated Modelling of Meteorological and Chemical Transport Processes / Impact of Chemical Weather on Numerical Weather Prediction and Climate Modelling”, 3-9 July 2011, Odessa, Ukraine (<http://atmos.physic.ut.ee/~muscaten/YSSS/1info.html>, NordForsk/MUSCATEN, TEMPUS-159352, PBL-PMES, QualiMet, MEGAPOLI, COST Action ES1004)

S.S. Zilitinkevich – member of International Organising Committee

S.S. Zilitinkevich “Turbulence and planetary boundary layers (PBLs): recent developments in physics and parameterization in atmospheric models” ([invited lecture](#))

S.S. Zilitinkevich “Modelling the PBL height” ([invited lecture](#))

11th Annual Meeting of European Meteorological Society (11th EMS / 10th ECAC), 12-16 September 2011, Berlin, Germany: Session AW8 “Boundary-layer physics and parameterizations in weather and climate models” (15.09.2011); Convener: S. Zilitinkevich, Co-Conveners: A.S. Petrosyan

S.S. Zilitinkevich “The height of the atmospheric planetary boundary layer: state of the art, new development, and remaining problems” (available in: EMS & ECAM 2011, Berlin, Germany, Abstracts & Programme)

12th International Baikal School on Basic Physics, 19-23 September 2011, Irkutsk, Russia

S.S. Zilitinkevich “Self organisation and non-local features of geophysical turbulent flows” ([invited lecture](#))

Ukrainian-Russian Conference “*Ocean Modelling: New Developments and Remaining Problems*”, 20-24 September 2011, Sevastopol, Ukraine.

S.S. Zilitinkevich “Turbulence and boundary layers as the air-sea interaction instruments” ([invited lecture](#))

XIX International Conference (School) on Marine geology “Geology of the seas and oceans”, 14-18 November 2011, Moscow (<http://www.ocean.ru/>)

S.S. Zilitinkevich “Geophysical turbulence and planetary boundary layers – instruments of interaction between geospheres” ([invited plenary presentation](#))

[XIX МЕЖДУНАРОДНАЯ НАУЧНАЯ КОНФЕРЕНЦИЯ (ШКОЛА) ПО МОРСКОЙ ГЕОЛОГИИ “ГЕОЛОГИЯ МОРЕЙ И ОКЕАНОВ” С.С. Зилитинкевич “Геофизическая турбулентность и планетарные пограничные слои – инструменты энергетического взаимодействия геосфер” ([invited plenary presentations](#))]

2012 (5 [invited presentations / lectures; organisation of 1 international conference](#))

IEAS High Level Academic Forum “21st Century Science and Technology for Green Economy and Sustainable development”, 6-7 April 2012, Beijing, China

S.S. Zilitinkevich “Turbulence and boundary layers in climate system” ([invited lecture](#))

Symposium “Mega-grants – for Environment of Russia” 24-26 May 2012, St. Petersburg, Russia: S. Zilitinkevich ([keynote lecture](#)) “Planetary boundary layers in the atmosphere and hydrosphere”; S. Zilitinkevich and M. Kulmala ”Pan- Eurasian Experiment: a new international initiative”

Russian National Conference “*Solar Activity and Nature of Global and Regional Climate Change*”, 19-22 June 2012, Irkutsk, Russia. S.S. Zilitinkevich – member of the Programme Committee

S.S. Zilitinkevich ([invited lecture](#)) “Turbulence in stable and very stable stratification: Advances in physics and new tools for modelling turbulent mixing in climate and climate-change models”

International Conference on Environmental Observations, Modelling and Monitoring Systems; MAIRS / NEESPI / SIRS Workshop “Climate Change Extremes in Northern Asia”, 24 June – 2 July 2012, Irkutsk, Russia.

S. Zilitinkevich ([invited lecture](#)) “On prospects of Russian-Finnish collaboration in environmental observations, modelling and information systems”

XII International Conference on Integral Methods in Science and Engineering (IMSE 2012), 23-27 July 2012, Bento Conclaves, Brazil.

S.S. Zilitinkevich ([invited lecture](#)) “Turbulence closure problem: State of the art and applications to environmental modelling” (abstract in: Book of Abstracts of the XII International Conference on Integral Methods in Science and Engineering, 23-27 July 2012, Bento Conclaves, Brazil, 12-13)

12.08.2012