

# CURRICULUM VITAE

## ALEXANDER N. SUKHODOLOV

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### ACADEMIC TRAINING

Ph.D., Institute of Geophysics and Geology, Kishinev, Moldova, 1993  
MS, Odessa Hydrometeorological Institute, Odessa, USSR, 1986

### MAJOR RESEARCH INTERESTS

Environmental fluid mechanics with the focus on fluvial systems (river-flow hydrodynamics, small-scale aerodynamics in river valleys). River turbulence (field and laboratory experiments). Theoretical, experimental, and numerical research on shallow flows (confluences, lateral shear layers, vegetated shear layers, wakes behind exposed bars and vegetated patches). Field experiments on transport processes (longitudinal dispersion, turbulent diffusion and effects of vegetation). Theoretical and experimental studies in ecohydraulics (phytoplankton, flow effects on fish and invertebrates). Research on morphodynamics processes (flow in meander bends, bed-forms dynamics, and sedimentation in recirculating flows).

### EMPLOYMENT

<b>2000-present</b>	<b>Senior Research Scientist</b>	<b>Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany</b>
<b>1997-2000</b>	Software Engineer (part time external position)	Nortek AS, Oslo, Norway
<b>1998-2000</b>	Visiting Research Scientist	Department of Geography, University of Illinois at Urbana-Champaign, USA
<b>1995-1996</b>	Research Fellow	Laboratory of River Hydrodynamics, Institute of Geophysics, Polish Academy of Sciences, Warsaw
<b>1992-1999</b>	Research Scientist	Institute of Geophysics and Geology, Academy of Sciences of Republic Moldova, Kishinev
<b>1986-1992</b>	Engineer - Hydrologist	Institute of Geophysics and Geology, Academy of Sciences of Republic Moldova, Kishinev

## RESEARCH ASSISTANTSHIPS

- 1997 Department of Geography, University of Illinois at Urbana-Champaign, USA
- 1991 Laboratory of River Hydrodynamics, Institute of Geophysics, Polish Academy of Sciences, Warsaw
- 1983-1986 Department of Hydraulics and Hydrometry, Odessa Hydrometeorological Institute, Ukraine, Odessa

## TEACHING

- 2010-2011 Course of lectures and practical training „Ecohydraulics of shallow flows“, FG Wasserwirtschaft und Hydrosystemmodellierung, Institut für Bauingenieurwesen, Technische Universität, Berlin
- 2009-2012 Lectures “Basics of Aquatic Ecology: Dynamics of River Flows”, Free University, Berlin

## AWARDS, GRANTS, AND ACADEMIC ACHIEVEMENTS

Total amount of finances raised in research grants amounts around 1.7 million Euro (DFG 6 grants, NATO 2 grants, NSF 1).

- 2020 River flow regulation, fish behavior and status (RIBES), EU Horizon 2020 (ITN), T06 Hydrodynamics of fish habitats in natural rivers, Principal Investigator.
- 2018 Hydrodynamics of fluvial wakes past large in-stream natural objects and their implications for riverbed morphology. Research grant from Deutsche Forschungsgemeinschaft (DFG), (SU 405/10), Principal Investigator.
- 2014 Transport and Mixing Processes at River Confluences. Research grant from Deutsche Forschungsgemeinschaft (DFG), (SU 405/7), Principal Investigator.
- 2013 Hydrodynamic Transport in Ecologically Critical Interfaces (HYTECH). EU Marie Curie Initial Training Network. Associate Partner.
- 2011 Felduntersuchungen zur Hydrodynamik in buhnenregulierten Flüssen mit Vegetation. Research grant from Deutsche Forschungsgemeinschaft (DFG), (SU 405/4), Principal Investigator.
- 2009 Interactions of Flexible Aquatic Vegetation with Turbulent Flows in Rivers: field experiments and mathematical modeling with implications for transport and retention of organic matter and nutrients in fluvial ecosystems. Bilateral research grant from Deutsche Forschungsgemeinschaft (DFG) and National Scientific Foundation, USA (NSF), (SU 629/1), Coinvestigator.
- 2008 Environmental Dynamics Laboratory in the Field. Bilateral research grant from Deutsche Forschungsgemeinschaft (DFG) and Netherlands Organization for Scientific Research (NWO), (SU 405/3), Principal Investigator.
- 2006 Fluid Dynamics Laboratory in the Field. Bilateral research grant from Deutsche Forschungsgemeinschaft (DFG) and Netherlands Organization for Scientific Research (NWO), (SU 405/2, DN 66-143), Principal Investigator.
- 2006 Collaborative research grant of North Atlantic Treaty Organization, NATO (ESP.NUKR.EV 982416), Principal Investigator.
- 2005 Collaborative research grant of North Atlantic Treaty Organization, NATO (ESP.NR.EV 981608), Principal Investigator.
- 1997 Collaborative research grant of National Science Foundation (NSF), USA (SBR 9710068), Coinvestigator.

- 1995 Scholarship of Polish Academy of Sciences, Warsaw.  
1981 Gold medal award for the high school graduation

### **PROFESSIONAL ACTIVITIES**

- Editorial Board: 2011- present Hydraulic Research, IAHR (Associate Editor)  
2008-2015 Aquatic Sciences (Associate Editor)
- Reviewer for foundations: Deutsche Forschungsgemeinschaft, Swiss National Foundation, USA-Israel Binational Science Foundation, Austrian Science Foundation
- Reviewer for journals: Water Resour. Res. (AGU), Earth Surface Proc. and Landforms, Archiv für Hydrobiologie, Hydrological Sciences Journal, Geomorphology, Hydraulic Engineering (ASCE), Journal of Hydrology, Limnology and Oceanography, Aquatic Sciences, Computers and Fluids (more than 70 papers in total)
- International Meetings: Organizer, 1<sup>st</sup> International Symposium on Fluvial Hydraulics, Morphodynamics, and Ecology. 27-31 April 2009, St. Pietro, Italy  
Organizer, 2<sup>nd</sup> International Symposium on Fluvial Hydraulics, Morphodynamics, and Ecology. 12-14 July 2011, Duino, Italy  
Co-organizer, section on shallow flows and hydrodynamics of groyne fields, RiverFlow 2008 international conference, IAHR, September 2008  
Organizer, 2<sup>nd</sup> Int. Workshop on Groyne Fields, 2007, Berlin  
Organizer, Int. Workshop on hydrodynamics and morphodynamics processes in gravel-bed rivers, September 2013, St. Petersburg, Russia
- Invited Lectures: Lecture on eco-hydraulics, summer school on hydrodynamics of complex flows, 2008, Delft University of Technology, the Netherlands

### **MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS**

- International Association of Hydraulic Engineering and Research IAHR, since 2006  
International Association of Geomorphologists, since 1995

**PUBLICATIONS:** 124 professional papers (57 in refereed journals, 19 papers in refereed proceedings, 4 book chapters, 36 conference contributions, and 8 in transactions and preprints)

Citation Metrics: (<http://scholar.google.com>)

Times cited: **2743**

h-index: **31**

i10-index **49**

## PUBLICATIONS IN REFERRED JOURNALS

- Horna-Munoz D., G. Constantinescu, B. Rhoads, Q. Lewis, and **A. Sukhodolov** (2020) Density effects at a concordant bed natural river confluence. *Water Resources Research*, 56 (published online).
- MacVicar B.J., and **A. Sukhodolov** (2019) Sampling strategies to improve scaling parameter estimates in rivers. *Journal of Hydraulic Research*, 57, 798-807.
- Sukhodolov A.**, and T. Sukhodolova (2019) Dynamics of flow at concordant gravel bed river confluences: Effects of junction angle and momentum flux ratio. *Journal of Geophysical Research-Earth Surface*, 124, 588-615.
- Sukhodolov A.** (2018) Experimental Hydraulics. *Journal of Hydraulic Research*, 56(3), 435-436.
- Sukhodolov A.**, J. Krick, T. Sukhodolova, Z. Cheng, B.L. Rhoads, and G.S. Constantinescu (2017) Turbulent flow structure at a discordant river confluence: Asymmetric jet dynamics with implications for channel morphology. *Journal of Geophysical Research-Earth Surface*, 122, 1278-1293.
- Sukhodolov A.**, T. Sukhodolova, and J. Krick (2017). Effects of vegetation on turbulent flow structure in groyne fields. *Journal of Hydraulic Research*, 55(1), 1-15.
- Weber A., J. Zhang, A. Nardin, **A. Sukhodolov**, and C. Wolter (2016). Modeling the influence of aquatic vegetation on the hydrodynamics of an alternative bank protection measure in a navigable waterway. *River Research and Applications*, 32(10), 2071-2080.
- Constantinescu G., B. Rhoads, and **A. Sukhodolov** (2016). Influence of planform geometry and momentum ratio on thermal mixing at a stream confluence with a concordant bed. *Journal Environmental Fluid Mechanics*, 16(4), 845-873.
- Sukhodolov A.**, Blettler M., J. Zhang, T. Sukhodolova, and G. Nuetzmann (2015). A study of flow dynamics implications for the benthic fauna in a meander bend of a lowland river. *Journal Hydraulic Research*, 53(4), 488-504.
- Sukhodolov, A.N.** 2015. Field-based research in fluvial hydraulics: potential, paradigms and challenges. *Journal of Hydraulic Research*, 53(1), 1-19.
- Marion A., Nikora, V., Puijalon S., Bouma T., Koll K., Ballio F., Tait S., Zaramella M., **Sukhodolov A.**, O'Hare M., Wharton G., Aberle J., Tregnaghi M., Devies P., Nepf H., Parker G., and B. Statzner 2014. Aquatic interfaces: a hydrodynamic and ecological perspective. *Journal of Hydraulic Research*, 52(6), 744-758.
- Constantinescu G., S. Miyawaki, B. Rhoads, and **A. Sukhodolov** 2014. Numerical evaluation of the effects of planform geometry and inflow conditions on flow, turbulence structure, and bed shear velocity at stream confluence with a concordant bed. *Journal of Geophysical Research-Earth Surface*, 119, 2081-2097.
- Zhang J., **A. Sukhodolov**, and H. Liu 2014. Non-hydrostatic versus hydrostatic modeling of free surface flows. *Journal of Hydroinformatics*, 26(4), 512-522.
- Sukhodolov A.** 2014. Hydrodynamics of groyne fields in a straight river reach: insight from field experiments. *Journal of Hydraulic Research*, 52(1), 105-120.
- Sukhodolov A.**, and T. Sukhodolova 2014. Shallow wake behind exposed wood-induced bar in a gravel-bed river. *Environmental Fluid Mechanics*, 14(5), 1071-1083.
- Constantinescu G., S. Miyawaki, B. Rhoads, and **A. Sukhodolov** 2012. Numerical analysis of the effect of momentum ratio on the dynamics and sediment entrainment capacity of coherent flow structures at stream confluence. *Journal of Geophysical Research-Earth Surface*, 117, F04028.
- Sukhodolova T., and **A. Sukhodolov** 2012. Vegetated mixing layer around a finite-size patch of submerged plants: Part I Theory and field experiments. *Water Resources Research*, 48, W10533.
- Sukhodolov A.**, and T. Sukhodolova 2012. Vegetated mixing layer around a finite-size patch of submerged plants: Part II Turbulence and coherent structures. *Water Resources Research*, 48, W12506.

- Schnauder I., and **A. Sukhodolov** 2012. Flow in a tightly curved meander bend: effects of seasonal changes in aquatic macrophyte cover. *Earth Surface Processes and Landforms* 37(11), 1142-1157.
- Sukhodolov A.** 2012. Structure of turbulent flow in a meander bend of a lowland river. *Water Resources Research*, 47, W01516.
- Sukhodolov A.**, Nikora V., and V. Katolikov 2011. Dynamics of flows in alluvial channels – the legacy of Kirill V. Grishanin. *J. Hydraulic Research*, 49(3), 285-292.
- Constantinescu G., Miyawaki S., Rhoads B., **Sukhodolov A.**, and G. Kirkil 2011. The structure of turbulent flow at a river confluence with momentum and velocity ratios close to one: Insight provided by an eddy-resolving numerical simulation. *Water Resources Research*, 47, W05507.
- Sukhodolov A.**, Schnauder I., and Uijttewaal W. 2010. Dynamics of shallow lateral shear layers: experimental study in a river with a sandy bed. *Water Resources Research*, 46, W11519.
- Sukhodolov A.**, and Uijttewaal W. 2010. Assessment of a river reach for environmental fluid dynamics studies. *Journal of Hydraulic Engineering*, ASCE, 136(11), 880-888.
- Sukhodolov A.**, and T. Sukhodolova. 2010. Case Study: Effect of submerged aquatic plants on turbulence structure in a lowland river. *Journal of Hydraulic Engineering*, ASCE, 136(7), 434-446.
- Kleeberg A., Köhler A., Sukhodolova T., and **A. Sukhodolov** 2010. Effects of aquatic macrophytes on organic matter deposition, resuspension and phosphorus entrainment in a lowland river. *Freshwater Biology*, 55, 326-345.
- Sukhodolov A.**, Tubino, M., Surian, N., Bertoldi, W., and Wolter, C. 2009. Implications of channel processes for juvenile fish habitats in Alpine rivers of Central Europe. *Aquatic Sciences*, 71, 338-349.
- Constantinescu G., **Sukhodolov A.**, and A. McCoy. 2009. Mass exchange in a shallow channel flow with a series of groynes: LES study and comparison with laboratory and field experiments. *Environmental Fluid Mechanics*, 9, 587-615.
- Rhoads B.L., and **Sukhodolov A.** 2008. Lateral momentum flux and the spatial evolution of flow within a confluence mixing interface, *Water Resources Research*, 44, W08440, DOI:10.1029/2007WR006634.
- Gabel F., X.-F. Garcia, M. Brauns, **A. Sukhodolov**, M. Leszinski, and Pusch M.T. 2008. Resistance to ship-induced waves of benthic invertebrates in various littoral habitats. *Freshwater Biology*, 53, 1567-1578.
- Wolter C., and **Sukhodolov A.** 2008. Random displacement versus habitat choice of fish larvae in rivers. *River Research and Applications*, 24, 661-672.
- Hilt S., Schönfelder I., Rudnicka A., Carls R., N. Nikolaevich, **A. Sukhodolov**, and Engelhardt C. 2008. Reconstructing pristine conditions regarding morphology, flow, nutrient conditions and submerged vegetation of a lowland river (River Spree, Germany) from paleomeanders. *River Research and Applications*, 24, 310-329.
- Sukhodolov A.**, Fedele J., and Rhoads B. 2006. Structure of flow over alluvial bedforms: an experiment on linking field and laboratory methods. *Earth Surface Processes and Landforms*, 31(10), 1292-1310.
- Sukhodolov A.** 2005. Comment on “Drag and reconfiguration of freshwater macrophytes” *Freshwater Biology*, 50(1), 194-195.
- Engelhardt C, Krüger A., **Sukhodolov A.**, and Nicklisch A. 2004. A study of phytoplankton spatial distributions, flow structure and characteristics of mixing in a river reach with groynes. *Journal of Planktonic Research*, 26, 1351-1366.
- Wolter C., Arlinghaus R., **Sukhodolov A.**, and Engelhardt C. 2004 A model of navigation-induced currents in inland waterways and implications for juvenile fish displacement. *Environmental Management*, 35, 656-668.
- Rhoads B., and **Sukhodolov A.** 2004. Spatial and temporal structure of shear-layer turbulence at a stream confluence. *Water Resour. Res.*, AGU, 40(6) W06304 10.1029/2003WR002811.

- Sukhodolov A.**, Engelhardt C, Krüger A., and Bungartz H. 2004. Case study: turbulent flow and sediment distribution in a groyne field. *Journal of Hydraulic Engineering*, ASCE, 130(1), 1-9.
- Sukhodolov A.**, Bungartz H, and Engelhardt C. 2003. Comments of "Determination of areal sedimentation rates in rivers by using plate sediment trap measurements and flow velocity – settling flux relationship" by Hans-Peter Kozerski, *Water Research*, 37(11), 2794-2795.
- Fischer H., **Sukhodolov A.**, Wilczek S., and Engelhardt C. 2003. Effects of flow dynamics and sediment movement on microbial activity in a lowland river. *River Research and Applications*, 19(5-6), 473-482.
- Arlinghaus R., Engelhardt C., **Sukhodolov A.**, and Wolter C. 2002. Fish recruitment in a canal with intensive navigation: implications for ecosystem management. *Journal of Fish Biology*, 61(6), 1386-1402.
- Sukhodolov A.**, Uijttewaal W.S.J., and Engelhardt C. 2002. On the correspondence between morphological and hydrodynamical patterns of groyne fields. *Earth Surface Processes and Landforms*, 27(3), 289-305.
- Rhoads B.L. and **Sukhodolov A.** 2001. Field investigation of three-dimensional flow structure at stream confluences: Part I. Thermal mixing and time-averaged velocities, *Water Resources Research*, AGU, 37(9), 2393-2410.
- Sukhodolov A.** and Rhoads B. 2001. Field investigation of three-dimensional flow structure at stream confluences: Part II. Turbulence, *Water Resources Research*, AGU. 37(9), 2411-2424.
- Sukhodolov A.N.**, Thiele M., Bungartz H., and Engelhardt C. 1999. Turbulence structure at an ice-covered river reach with sand bed, *Water Resources Research*, AGU, 35(3), 889-894.
- Sukhodolov A.**, Thiele M. 1999. A study of the three-dimensional structure of stream flow turbulence. *Water Resources*, Russian Academy of Sciences, 26(1), 14-21.
- Sukhodolov A.**, Thiele M. 1998. On the acoustic Doppler velocimeter application for river turbulence measurements, *Water Resources*, Russian Academy of Sciences, 25(4), 491-493.
- Sukhodolov A.N.**, Nikora V.I. 1998. The set of hardware and software tools for turbulence structure investigations in open channel flows, *Water Resources*, Russian Academy of Sciences, 25(3), 370-371.
- Sukhodolov A.N.** 1998. On the longitudinal dispersion in rivers, *Water Resources*, Russian Academy of Sciences, 25(2), 186-192.
- Czernuszenko W., Rowinski P., **Sukhodolov A.** 1998. Experimental and numerical validation of the dead-zone model for longitudinal dispersion in rivers. *Journal of Hydraulic Research*, 36(2), 269-280.
- Sukhodolov A.N.**, Nikora V.I., Rowinski P.M., Czernuszenko W. 1998. Closure to discussion of the paper "A case study of longitudinal dispersion in small lowland rivers." *Water Environment Research*, Water Env. Fed., 70(7), 1332-1333.
- Sukhodolov A.**, Thiele M., Bungartz H. 1998. Turbulence structure in a river reach with sand bed, *Water Resources Research*, AGU, 34(5), 1317-1334.
- Sukhodolov A.N.**, Nikora V.I., Rowinski P.M., Czernuszenko W., 1997. A case study of longitudinal dispersion in small lowland rivers. *Water Environment Research*, Water Env. Fed., 69(7), 1246-1253.
- Nikora V.I., **Sukhodolov A.N.**, Rowinski P.M. 1997. Statistical sand wave dynamics in one-directional water flows. *Journal of Fluid Mechanics*, 351(25), 17-39.
- Sukhodolov A.N.**, Napiorkowski J.J., Rowinski P.M., 1996. Application of flow prediction based on attractors. *Acta Geophysica Polonica*, XLIV(3), 277-286.
- Nikora V.I., **Sukhodolov A.N.**, Shalar G.S., Kushnir N.V., Arnaut N.A. 1995. Flow turbulence characteristics on the section of a small river. *Journal Rev. Roum. De Geographie*, 39, 79-88.
- Nikora V.I., Rowinski P., **Sukhodolov A.N.**, Krasuski D. 1994. Structure of river turbulence behind warm water discharge. *Journal of Hydraulic Engineering*, ASCE, 120(2), 191 - 208.

## OTHER REFERRED PUBLICATIONS

- Sukhodolov A.N.** and T.A. Sukhodolova 2016. Field experiments on flow hydrodynamics at river confluences. In: *River Flow 2016*. G. Constantinescu, M. Garcia, D. Hanes (eds.) Proc. of 8<sup>th</sup> Int. Conference on Fluvial Hydraulics, July 11-14, St. Louis, USA, 580-581.
- Sukhodolova T.A., **Sukhodolov A.N.** and J. Krick 2016. Field measurements of flow hydrodynamics at a discordant confluence of a gravel-bed river. In: *River Flow 2016*. G. Constantinescu, M. Garcia, D. Hanes (eds.) Proc. of 8<sup>th</sup> Int. Conference on Fluvial Hydraulics, July 11-14, St. Louis, USA, 578-579.
- Sukhodolov A.N.**, and T.A. Sukhodolova 2014. Field experiments in vegetated groyne fields. In: *River Flow 2014*. A. J. Schleiss, G. de Cesare, M.J. Franca, M. Pfister (eds.) Proc. of 7<sup>th</sup> Int. Conference on Fluvial Hydraulics, September 2-5, 2014, Lausanne, Switzerland, 475-481.
- Krick J., and **A.N. Sukhodolov** 2014. Turbulent flow over fast moving dunes: Improved method for studies in natural streams. In: *River Flow 2014*. A. J. Schleiss, G. de Cesare, M.J. Franca, M. Pfister (eds.) Proc. of 7<sup>th</sup> Int. Conference on Fluvial Hydraulics, September 2-5, 2014, Lausanne, Switzerland, 321-326.
- Sukhodolov A.N.** and V.I. Nikora. 2012. Bursting and flow kinematics in natural streams. In: *River Flow 2012*. R.E. Murillo Munoz (ed.) Proc. of 6<sup>th</sup> Int. Conference on Fluvial Hydraulics, September 5-7, 2012, San Jose, Costa Rica, **1**, 113-120.
- Sukhodolova T.A.** and A.N. Sukhodolov 2012. Dynamics of turbulent flow along and behind vegetation patches. In: *River Flow 2012*. R.E. Murillo Munoz (ed.) Proc. of 6<sup>th</sup> Int. Conference on Fluvial Hydraulics, September 5-7, 2012, San Jose, Costa Rica, **1**, 279-285.
- Sukhodolov A.** and E. Kaschtschejewa. 2010. Turbulent flow in a meander bend of a lowland river: field measurements and preliminary results. In: *River Flow 2010*. A. Dittrich, K. Koll, J. Aberle and P. Geisenhainer (eds.) Proc. of 5<sup>th</sup> Int. Conference on Fluvial Hydraulics, September 7-10, 2010, Braunschweig, Germany, **1**, 309-316.
- Blettler M., **Sukhodolov A.**, and K. Tockner. 2010. Hydraulic conditions over bed forms control the benthic fauna distribution in a lowland river (Spree River, Germany). In: *River Flow 2010*. A. Dittrich, K. Koll, J. Aberle and P. Geisenhainer (eds.) Proc. of 5<sup>th</sup> Int. Conference on Fluvial Hydraulics, September 7-10, 2010, Braunschweig, Germany, **2**, 1463-1467.
- Miyawaki S., Constantinescu G., Rhoads B., and **A. Sukhodolov**. 2010. Changes in three-dimensional flow structure at a river confluence with changes in momentum ratio. In: *River Flow 2010*. A. Dittrich, K. Koll, J. Aberle and P. Geisenhainer (eds.) Proc. of 5<sup>th</sup> Int. Conference on Fluvial Hydraulics, September 7-10, 2010, Braunschweig, Germany, **1**, 225-232.
- Sukhodolov A.**, Anlanger C., Schnauder I., Uijtewaal W.S.J., and H.-P. Rouch. 2008. Field experiments on flow hydrodynamics and exchange processes in groyne fields. In: *River Flow 2008*. M.S. Altinakar, M.A. Kokpinar, I. Aydin, S. Cokgor and S. Kirkgoz (eds.) Proc. of 4<sup>th</sup> Int. Conference on Fluvial Hydraulics, September 3-5, 2008, Cesme, Izmir, Turkey, **1**, 865-874.
- Schnauder I., **Sukhodolov A.**, Uijtewaal W.S.J., and R.J. Labeur. 2008. Field experiments and numerical modeling on shallow mixing layers at a confluence of two parallel streams. In: *River Flow 2008*. M.S. Altinakar, M.A. Kokpinar, I. Aydin, S. Cokgor and S. Kirkgoz (eds.) Proc. of 4<sup>th</sup> Int. Conference on Fluvial Hydraulics, September 3-5, 2008, Cesme, Izmir, Turkey, **1**, 883-892.
- Katolikov V.M., and **A.N. Sukhodolov**. 2008. On the physical grounds of the morphological criterion for the riverbed mesoforms. In: *River Flow 2008*. M.S. Altinakar, M.A. Kokpinar, I. Aydin, S. Cokgor and S. Kirkgoz (eds.) Proc. of 4<sup>th</sup> Int. Conference on Fluvial Hydraulics, September 3-5, 2008, Cesme, Izmir, Turkey, **2**, 1353-1361.
- Constantinescu G., **Sukhodolov A.**, and A. McCoy. 2008. Role of coherent structures in the mass exchange between the main channel and a series of shallow embayments. In: *River Flow 2008*. M.S. Altinakar, M.A. Kokpinar, I. Aydin, S. Cokgor and S. Kirkgoz (eds.) Proc. of 4<sup>th</sup> Int. Conference on Fluvial Hydraulics, September 3-5, 2008, Cesme, Izmir, Turkey, **1**, 857-864.
- Sukhodolov A.**, and Sukhodolova T. 2006. Evolution of mixing layers in turbulent flow over submersible vegetation: field experiments and measurement study. In: *River Flow 2006*. R.M.L.

- Ferreira, E.C.T.L. Alves, J.G.A.B. Leal and A.H. Cardoso (eds.) Proc. of 3<sup>rd</sup> Int. Conference on Fluvial Hydraulics, September 6-8, 2006, Lisbon, Portugal, **1**, 525-534.
- Sukhodolova T., **A. Sukhodolov**, H-P. Kozerski, and J. Köhler. 2006. Longitudinal dispersion in a lowland river with submersible vegetation In: *River Flow 2006*. R.M.L. Ferreira, E.C.T.L. Alves, J.G.A.B. Leal and A.H. Cardoso (eds.) Proc. of 3<sup>rd</sup> Int. Conference on Fluvial Hydraulics, September 6-8, 2006, Lisbon, Portugal, **1**, 631-638.
- Sukhodolov A**, Fedele J., and Rhoads B. 2004. Turbulent river flow over moveable and molded bed forms: a comparative field study. In: *RiverFlow 2004*, M. Greco, A. Carravetta & Della Morte (eds.), A. Balkema, **1**, 317-325.
- Sukhodolova T., **Sukhodolov A.**, and Engelhardt C. 2004. A Study of turbulent flow structure in a partly vegetated river reach. In: *RiverFlow 2004*, M. Greco, A. Carravetta & Della Morte (eds.), A. Balkema, **1**, 469-478.
- Nikolaevich N., **Sukhodolov A.**, and Engelhardt C. 2004. Assaying historical maps and relict channel forms for the analysis of channel processes (on example of the Spree River in Germany). In: *RiverFlow 2004*, M. Greco, A. Carravetta & Della Morte (eds.), A. Balkema, **1**, 181-189.
- Engelhardt C, **Sukhodolov A**, and Wolter C. 2004. Estimating effect of navigation on fish habitats in inland waterways. In: *RiverFlow2004*, M. Greco, A. Carravetta & Della Morte (eds.), A. Balkema, **2**, 1365-1371.

#### **BOOKS AND BOOK CHAPTERS**

- Sukhodolov A.N.**, O.O. Shumilova, N.S. Loboda, V.M. Katolikov, N.A. Arnaut, V.V. Bekh, M.A. Usatii, L.A. Kudersky, and Skakalsky B.G. 2020. The Western Steppic Rivers. Chapter 13. *Rivers of Europe*. 2<sup>nd</sup> edition, K. Tockner, C.T. Robinsnson, and C. Zarlf (eds.), Elsevier, in press.
- Sukhodolov A.N.**, B.L. Rhoads, and H-P. Kozerski. 2009. Currents in Rivers. Chapter 85. *Encyclopedia of Inland Waters*. G. Likens (ed.), Elsevier, **1**, 522-529.
- Sukhodolov A.N.**, N.S. Loboda, V.M. Katolikov, N.A. Arnaut, V.V. Bekh, M.A. Usatii, L.A. Kudersky, and Skakalsky B.G. 2009. The Western Steppic Rivers. Chapter 13. *Rivers of Europe*. K. Tockner, C.T. Robinsnson, and U. Uehlinger (eds.), Elsevier, 497-523.
- Engelhardt C., **A. Sukhodolov**, C. Wirtz, H. Baumert, und K. Duwe. 2006. Hydro- und Morphodynamik. In: *Stoffdynamik und Habitatstruktur in der Elbe*. M. Pusch und H. Fischer (Hrsg.), Weissensee Verlag, Berlin, 87-104.

#### **CONTRIBUTIONS TO PROFESSIONAL MEETINGS**

- Sukhodolov, A.**, and A. Nardin 2012. Shallow wake flow downstream an islet in a gravel bed river. In: Proc. of the Third International Symposium on Shallow Flows, Constantinescu S.G. and H.J. Fernando (eds.), Iowa City, June 4-6, 2012, 485-487.
- Nardin, A. and **A. Sukhodolov** 2012. Performance of ADCP in shallow flow field studies. In: Proc. of the Third International Symposium on Shallow Flows, Constantinescu S.G. and H.J. Fernando (eds.), Iowa City, June 4-6, 2012, 343-346.
- Constantinescu, G., S. Miyawaki, B. Rhoads, and **A. Sukhodolov** 2012. On the structure of shallow mixing interface at river confluence. In: Proc. of the Third International Symposium on Shallow Flows, Constantinescu S.G. and H.J. Fernando (eds.), Iowa City, June 4-6, 2012, 340-341.
- Sukhodolov, A.** 2012. From field with a lab: tribute to Gerhard Jirka's legacy. In: Proc. of the Third International Symposium on Shallow Flows, Constantinescu S.G. and H.J. Fernando (eds.), Iowa City, June 4-6, 2012, 323-325.
- Sukhodolova, T.A., and **A.N. Sukhodolov** 2012. Vegetated shear layer around a finite-size patch of submerged plants. In: Proc. of the Third International Symposium on Shallow Flows, Iowa City, June 4-6, 2012, 95-97.



- Blancaert, K., Schnauder, I., **Sukhodolov, A.**, van Balen, and W.S.J. Uijttewaal 2009. Meandering: field experiments, laboratory experiments and numerical modeling. River, Coastal and Estuarine Morphodynamics (RCEM), Santa Fe, Argentina, September 21-25, 2009.
- Miyawaki, S., Constantinescu, G., Kirkil, G., Rhoads, B., and **A. Sukhodolov**. 2009. Numerical investigation of three-dimensional flow structure at a river confluence. Proc. Of 33<sup>rd</sup> IAHR Congress, 9-14 August, Canada, Vancouver. (CD ROM).
- Anlanger C., **Sukhodolov A.**, Schnauder I., Uijttewaal W.S.J., and H.P. Rauch. 2008. Impact of submerged groynes on the flow field – results from a field experiment at the River Spree, Germany. *Geophysical Research Abstracts*, Vol. 10, EGU2008-A-11145, 2009, SRef-ID: 1607-7962/gra/ EGU2008-A-11145.
- Schnauder I., Uijttewaal W.S.J., and **A.N. Sukhodolov**. 2007. Shallow mixing layers at a confluence of parallel streams: field experiments and preliminary results. In: *Hydraulic Measurements & Experimental Methods*. (E.A. Cowen et al., eds) Proc. Int. Conf. 10-12 Sept. 2007, Lake Placid, USA, 268-273.
- Sukhodolov A.** and T. Sukhodolova. 2007. Coherent structures in river flows over submerged vegetation: experimental study in a lowland river. In: *Hydraulic Measurements & Experimental Methods*. (E.A. Cowen et al., eds) Proc. Int. Conf. 10-12 Sept. 2007, Lake Placid, USA, 172-177.
- Vowinkel B., Schnauder I., and **A.N. Sukhodolov** 2007. Spectral dynamics of turbulence in shallow mixing layers at a confluence of two parallel streams. In: *Hydraulic Measurements & Experimental Methods*. (E.A. Cowen et al., eds) Proc. Int. Conf. 10-12 Sept. 2007, Lake Placid, USA, 635-640.
- Sukhodolov A.**, Uijttewaal S.W.J., Schnauder I., Sukhodolova T., Erdbrink C., Brevis W., Pusch M., and F. Gabel. 2007. Flow visualization in natural streams: examples and perspectives. In: 32<sup>nd</sup> Congress of IAHR, 1-6 July 2007, Venice, Italy, V1, 68.
- Sukhodolov A.**, Nützmänn G., and V. Katolikov. 2005. On dynamics of bedforms in natural streams: implications for exchange processes between surface and interstitial waters and benthic biota. *Materials and Geoenvironment*. 52(1), 349.
- Sukhodolov A.**, and Sukhodolova T. 2005. Morphodynamics and hydraulics of vegetated river reaches: a case study on the Muggelspre in Germany. In: *River Coastal and Estuarine Morphodynamics*, G. Parker, M. Garcia, and B. Rhoads (eds.).
- Brunke M., **Sukhodolov A.**, Fischer H., Wilczek S., Engelhardt C. and Pusch M. 2002. Benthic and hyporheic habitats of a large lowland river (Elbe, Germany): influence of river engineering. *Verh. Internat. Verein. Limnol.* 28, Stuttgart, February 2002, 153-156.
- Brunke M., Engelhardt C., and **Sukhodolov A.** 2002. Effects of navigation-induced currents and waves on benthic invertebrates. In: Proc. of 4<sup>th</sup> International Ecohydraulics Symposium, Cape Town, South Africa, March 3-8, 9 (full length paper on CD).
- Brunke M., **Sukhodolov A.**, and Engelhardt C. 2001. Sunk und Wellenschlag durch Schiffe in Wasserstrassen: Hydraulische Kräfte und Litoralfauna. In: Deutsche Gesellschaft für Limnologie Tagungsbericht, Tutzing, 412-416.
- Fischer H., **Sukhodolov A.**, Wilczek S., and Engelhardt C. 2002. Effects of flow dynamics and sediment movement on microbial activity in a lowland river. In: Proc. of 4<sup>th</sup> International Ecohydraulics Symposium, Cape Town, South Africa, 2002, March 3-8, 17 (full length paper on CD).
- Engelhardt C., Brunke, M., and **Sukhodolov A.** 2001. Effect of Navigation on Bed Shear Stresses, Sediment Entrainment, and Aquatic Organisms in Groyne Fields. In: Proc. of 3<sup>rd</sup> International Symposium on Environmental Hydraulics, Arizona State University, Tempe, USA, 2001, Dec. 5-8, 34, (full length paper on CD).
- Engelhardt C., Brunke, M., Arlinghaus R., and **Sukhodolov A.** 2002. Der Einfluss des Schiffsverkehrs auf die hydraulischen Verhältnissen ufernahen Habitaten von Wasserstrassen. In: Die Elbe – neue Horizonte des Flussgebettsmanagements (Hrsg. Geller, W. et al.), Teubner, Stuttgart, S., 301-302.

- Sukhodolov A.**, Engelhardt C. 2001. Velocity Patterns in the Groyne Fields. In: Proc. of 3<sup>rd</sup> International Symposium on Environmental Hydraulics, Arizona State University, Tempe, USA, 2001, Dec. 5-8, 46, (full length paper on CD).
- Sukhodolov A.** 1999. Turbulence investigation at the river junction. In: Proc. of the V-th Conference "Dynamics and Thermics of Rivers, Reservoirs and Sea Coastal Zones", WPI RAS, Moscow, 1999, Nov. 22-26, 81-85.
- Sukhodolov A.** 1998. A simple empirical model of river turbulence. In: Proc. Of NATO Advanced Research Workshop "Stochastic models of hydrological processes and their applications to problems of environmental preservation", Water Problems Institute, 1998, Moscow, Russia, Nov. 23-27, 264-266.
- Sukhodolov A.**, Thiele M. and Bungartz H. 1998. Effects of upper flow surface on turbulence structure in rivers. In: Advances in Hydro - Science & Engineering, Cottbus/Berlin, Germany, Sept. 1998, 68, (full length paper on CD).
- Sukhodolov A.**, Thiele M. and Bungartz H. 1998. Detection of coherent structures in river flows. In: Advances in Hydro - Science & Engineering, Cottbus/Berlin, Germany, Sept. 1998, 65, (full length paper on CD).
- Sukhodolov A.N.**, Nikora V.I. and Shteinman B.S. 1997. Hydraulic design for stream restoration, MLDCI conference, Oxford, USA, May 1997, 576-580.
- Shteinman B., Nikora V., Ekhlich M. and **Sukhodolov A.** 1996. An experimental validation of the „frozen” turbulence hypothesis for river flows, 6<sup>th</sup> European Turbulence Conference - ETC - VI, Lausanne, Switzerland, July 2-5, 1996, **36**, 531 - 532.
- Sukhodolov A.N.**, Rowinski P.M., Nikora V.I. 1995. Estimation of advection impact on longitudinal dispersion in rivers. In: Proc. XV Summer Hydraulic School, Trebishovic - Wroclaw, 18 - 22 September, 213 – 218.
- Nikora V.I., **Sukhodolov A.N.**, Shalar G.S., Rowinski P. 1995. Field Measurements of Sand Waves Spectra in River. In: Transport and sedimentation of Solid Particles. 8th International Conference, Prague, Jan., C5-1 - C5-6.
- Nikora V.I., **Sukhodolov A.N.** 1994. Dispersion of impurities in small rivers. In: Proc. of International symposium East-West, North-South Encounter on the State-of-the-art in River Engineering Methods and design Philosophies, May 1994, St. Petersburg, **II**, 203-212.
- Nikora V.I., **Sukhodolov A.N.**, Hicks M., Smart G., Rowinski P. 1994. On the river turbulence strange attractor's dimensionality. In : Dynamics and thermics of rivers, reservoirs, internal and marginal seas, Russian Academy of Science, Moscow, Nov., 126 -129.
- Nikora V.I., **Sukhodolov A.N.**, Ropot V.M., Capchelya A.M. 1993. Peculiarities of a conservative pollutants propagation in small rivers. In: Rencontres Hydrologiques Franco - Rumanians, Tulcea (Roumania), 80 - 82.
- Nikora V.I., **Sukhodolov A.N.** 1993. Longitudinal dispersion of an impurity in small rivers. In: Moldova: Opening of its culture and science for the West, Kishinev, 261.
- Nikora V.I., Czernuszenko W., **Sukhodolov A.N.**, Rowinski P. 1993. Structure of turbulence in small rivers. In: Advances in Hydro - Science & Engineering, Washington, **1**, 1110 - 1115.
- Nikora V.I., **Sukhodolov A.N.** 1993. Longitudinal dispersion of conservative pollutants in small rivers. In: Advances in Hydro - Science & Engineering, Washington, **1**, 379-384.
- Nikora V.I., Arnaut N.A., **Sukhodolov A.N.** 1992. Hydrological processes in channels of Moldova's small rivers and their changes caused by industrial development. In: Ecology and environmental problems in Moldova. Kishinev, Stiinta, 44.

## TRANSACTIONS

- Sukhodolov A.** 2012. Field-scale experimentation in fluvial hydrodynamics: experience and perspectives. Hydrolink IAHR, 4, 114-117.

- Sukhodolov A.**, T. Sukhodolova, and I. Schnauder 2008. Der Blick fürs Ganze: Die Ökohydraulik. In: Berichte des IGB, V 25, p. 16.
- Sukhodolov A.** and T. Sukhodolova 2006. Field-scale experiment on the dynamics over submerged macrophytes. In: Berichte des IGB, V 23, p. 65-78.
- Nikolaevich N., **Sukhodolov A.**, Engelhardt C. 2003. Geomorphological analysis of the preindustrial channel of the lower Spree. In: Berichte des IGB, **15**, 37-45.
- Sukhodolov A.**, Engelhardt C., Bungartz H., Kruger A., and Kruger H. 2001. Flow structure in groyne fields: case study on the Elbe river. In: Berichte des IGB, **13**, 27-34.
- Nikora V.I., Arnaut N.A., **Sukhodolov A.N.**, Naumenko A.M. 1991. Some results of stationary field investigations of the channel process on small rivers of Moldova. In: Hydrology of small rivers. Shtiintsa, Kishinev (USSR), 44-61.

### **PREPRINTS**

- Engelhardt C., Kurbanmuradov O., Sabelfeld K., and **Sukhodolov A.** 2001. Numerical study of the statistical characteristics of the mixing processes in rivers, Preprint N 7000, Weierstraß-Institut für Angewandte Analysis und Stochastik, Berlin.
- Nikora V.I., **Sukhodolov A.N.**, 1991. Ecology and hydraulic estimations of small rivers' beds regulation at augmentation of water supply. Acad. of Sciences of Moldova, Kishinev.

### **THESIS AND DISSERTATION**

- 1993 Longitudinal Dispersion and Its Quantitative Estimation in Small Rivers (Ph.D. - Institute of Geophysics and Geology, Kishinev, Moldova, scientific adviser Dr. V.I. Nikora)
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### **COMMERCIAL SOFTWARE**

- Sukhodolov A.N.** 1998-2000. ExploreADV (later ExploreV), version 1.0-1.5, Graphical viewer and post-processing software for acoustic Doppler velocimeters. Windows 95, Windows NT, Visual C++6.0, Nortek AS, Norway.
- Sukhodolov A.N.**, Gordon L. 1999. ConvertADCP, version 1.0, Converter for ADCP files into ADP formats, Windows NT, Visual C++6.0, Matlab, Nortek USA, San Diego, USA.
- Sukhodolov A.N.** 1999. ExploreAQD, version 1.0, Graphical viewer and post-processing software for AquaDopps. Windows 95, Windows NT, Visual C++6.0, Nortek AS, Norway.

### **NONCOMMERCIAL AND SHAREWARE SOFTWARE**

- Sukhodolov A.N.** 2002. Particle tracking in recirculating flows software, Windows NT, Visual C++6.0, IGB, Berlin.
- Sukhodolov A.N.**, and Gomez B. 2001. Grain Analyzer. Windows NT, Visual C++6.0, IGB, Berlin.
- Sukhodolov A.N.**, and Rowinski P.M. 1995. Software package for longitudinal dispersion with dead zone evaluation, MS-DOS, Turbo-Pascal 7.0, IGG, Polish Academy of Sciences.

**Sukhodolov A.N.**, and Nikora V.I. 1994. TSA, time-series analyzing software, MS-DOS, Pascal, Turbo-Vision 6.0, IG&G, Moldova.

**Sukhodolov A.N.**, and Nikora V.I. 1989. CHANNEL, channel design supportive software, SVM, FORTRAN, IG&G, Moldova.

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