

# CURRICULUM VITAE

## Personal details

*Name* Georgiy Kirillin  
*Date and place of birth* 26th August, 1969. Karaganda, USSR  
*Marital status* Married, one child  
*Nationality* Kazakhstan  
*Permanent residence* Germany

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## Present Affiliation

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## Research profile

Environmental fluid mechanics, physical limnology and oceanography, air-water heat and mass exchange, boundary layer physics, circulation and mixing in natural fluids, numerical modeling, climate change and natural water bodies.

## Education

*November 2002* Dr. Rer. Nat. Humboldt-University, Berlin.  
PhD thesis: “*Modeling of the vertical heat exchange in shallow lakes*”

*June 1993* MSc. degree (Physical Oceanography)  
Master Thesis: “*Use of Icebergs Drift for Identification of Currents in the Oceanic Surface Layer*”

## Employment history

<i>2002-present</i>	Institute for Water Ecology and Inland Fisheries, Berlin, Germany: Senior Scientist
<i>June 1999 – Sep 2002</i>	Institute for Water Ecology and Inland Fisheries, Berlin, Germany: Ph.D. Student
<i>January 1996 – May 1999</i>	Institute of Limnology, Russian Academy of Sciences. St-Petersburg, Russia: Scientist
<i>October 1994 – January 1996</i>	Institute of Limnology, Russian Academy of Sciences. St-Petersburg, Russia: Engineer

## Research projects coordinated

<i>Project duration</i>	<b>Project title, funding source</b>
<i>2015-2017</i>	<b>IceBound:</b> “Heat exchange at the ice-water boundary interface and the ice boundary layer in freshwater lakes” (DFG KI-853/13-1)
<i>2014</i>	<b>LACUNA:</b> “Lake CUrrents during polar Night in Arctic”. EU FP7 Program INTERACT.
<i>2013-2016</i>	<b>LakeShift:</b> “Regime shifts in lake ecosystems: Testing theory with long-term observational data and large scale experiments” (DFG KI-853/6)
<i>2013</i>	<b>CONCUR:</b> “Solar convection and lateral currents under lake ice cover”. EU FP7 Program INTERACT.
<i>2009-2013</i>	<b>SLICE:</b> “Heat and mass transport in lakes under seasonal ice cover”. DFG KI-853/5.
<i>2008-2012</i>	<b>Seiches &amp; Bacteria:</b> “Effect of internal waves on microbiological habitats and activity as well as mass exchange on the water-sediment boundary of Lake Stechlin”. DFG GR-1540/15.
<i>2008-2010</i>	<b>Algae under ice:</b> “Spring bloom of algae in ice-covered shallow lakes: Physical and environmental aspects”. NATO Collaborative Linkage Grant ESP.NR.NRCLG 982964.

- 2005-2010*                      **Clime & Polymixis:** “Climatic impact on temperature and mixing regime of polymictic lakes and its consequences for lake ecosystems”. DFG KI-853/3 (continued as BE-1383/7).
- 2004-2007*                      **“Circulation in Lake Stechlin”**, German Research Foundation (DFG), Grant KI-853/2.

### **Supervising graduate students, master and bachelor studies**

- 2014-2015*                      J. Lenz (BSc): Schwimmende Solaranlagen - klimatologische Effekte (Floating solar farms - climatological effects). Supervisor, defended September 2015
- 2014-2015*                      J. Foerster, MSc Study “Thermal regime of ice-covered Arctic lakes”. Supervisor, defended: June 2015.
- 2009-2013*                      J. Bernhard, PhD study “Mass transport by seiche-driven convection in sediment: observations and laboratory modeling”. Supervisor, defended: September 2013.
- 2008-2013*                      S. Schimmelpfennig, PhD Study “Transport modeling of pharmaceutically active compounds in Lake Tegeler See, Berlin”. Supervisor, defended: December 2015.
- 2008-2009*                      J. Bernhardt, MSc study “Ice covers of Brandenburg Lakes – Past and Future”. Supervisor, defended 2009
- 2008-2009*                      W. Phillip, MSc study “Surface/groundwater balance of Lake Stechlin”. Supervisor, defended 2010.
- 2007-2008*                      S. Krüger, MSc study “Online system for lake temperature nowcasting in the Berlin/Brandenburg area”. Supervisor, defended 2009.

### **Co-ordinating PostDoc Studies**

- 2013-2015*                      Dr. Tom Shatwell “Effects of light conditions on seasonal mixing regime of lakes”, 2013-2015

- 2010-2012* Dr. William Rizk “Circulation in seasonally ice-covered lakes”, 2011-2013
- 2005-2008* Dr. Sergey Golosov “Global warming effect of thermal and oxygen regime of temperate lakes”, 2005-2009

### **Organization of conferences and symposia**

- 2015* Special session on integrated modeling of lakes in the climate system. 2015 ASLO Aquatic Sciences meeting. Co-organizer
- 2014* Sino-German Symposium “Ice-covered aquatic systems in the changing climate”. Taiyuan, China. Organizer
- 2014* Special session on lake ice. 22nd IAHR Ice Symposium, Singapore. Co-organizer
- 2012* Special session on “ecological processes under ice cover” 21st IAHR Ice Symposium, Dalian, China. Co-organizer
- 2010* Second International Symposium on Winter Limnology, Berlin, Germany. Organizer.
- 2007* 11th workshop on Physical Processes in Natural Waters, Warnemünde, Germany. Co-organizer.

### **Lectures and invited talks**

- 2015* Invited lecture: “Physical processes in ice-covered lakes”. Cold and Arid Environmental and Engineering Institute, Chinese Academy of Sciences. September 2015.
- 2015* Invited talk: “Circulation in ice-covered lakes”. 2015 ASLO Aquatic Sciences meeting.
- 2013* Invited talk: “Convection in freshwater lakes”. Mathematics of Planet Earth 2013. Weierstrass Institute for Applied Analysis and Stochastics (WIAS, Berlin).
- 2012* Invited talk: “Towards improved treatment of lake stratification in FLake”. 3rd International workshop on “Parameterization of

	Lakes in Numerical Weather Prediction and Climate Modelling.
2012	Keynote lecture: “Convection in ice-covered lakes”. 21st IAHR Ice Symposium.
2008	Invited lecture in University of Helsinki, Finland.
2008	Invited lecture in Free University, Berlin
2006	Invited talk in Institute of Baltic Research, Warnemünde, Germany.

### **Courses taught**

2015	“Physics of Arctic aquatic environments”. University Centre of Svalbard (UNIS), Norway
2014-2016	“Aquatic physics” as part of “Aquatic Ecology” course. Free University, Berlin, Germany
September – October 2009	Course of lectures “Hydrodynamics of lakes” in frames of the IAHR-EGW Engineering Graduate School Environment Water “Modeling of Flow, Transport and Reaction Processes in Surface Waters”.

### **Organization/participation in expeditions and field experiments**

October 2015	18th Expedition to Aral Sea, Kazakhstan. Leading institution: Shirshov-Institute of Oceanology, Moscow. <b>Responsibility:</b> Concept and realization of the wintertime autonomous monitoring of water parameters.
September 2015	Expedition to Ngoring Lake, Qinghai-Tibet Plateau. Leading institution: Cold and Arid Environmental and Engineering Institute, Chinese Academy of Sciences. <b>Co-organizer</b>
2013-2014	Field experiments on circulation and mixing in ice-covered polar lakes. <i>Site:</i> Kilpisjarvi, Finland. <i>Methods:</i> Acoustic Doppler profiling, CTD casts, autonomous underwater vehicle (AUV) transects, shear/temperature

- microstructure profiling, moored temperature/oxygen stations. *Participants*: IGB, University of British Columbia (UBC), University of Tasmania (UTAS), University of Helsinki (UH). *Function*: **PI**
- July 2013* Joint field experiment on sinking rates of dead zooplankton in turbulent stratified environment. *Site*: Lake Stechlin, Germany. *Methods*: shear microstructure profiling, acoustic Doppler profiling. *Participants*: IGB, Institute of Biophysics of the Russian Academy of Sciences (Krasnoyarsk), *Function*: **PI**
- October 2012* Field experiment on circulation in Flathead Lake, Montana, USA. *Methods*: Acoustic Doppler profiling, moored temperature stations. *Participants*: University of Montana, University of New Hampshire, IGB. *Function*: support of the field experiment by 3-d circulation modeling (POM and ELCOM models).
- 2008-2012* Multidisciplinary field program on circulation in ice-covered lakes Pääjärvi, Välkeä-Kottinen, Vanajavesi, Finland. **PI**
- 2006-2009* Field investigations on the seiche-induced convection in the upper sediment, Lake Stechlin, Germany. **PI**
- 2005-2008* Lagrangian studies of lake circulation using GPS-tracked drifters. Lake Stechlin, Germany. **PI**
- 2001* Field experiments on Lake Müggelsee, Germany: circulation studies based on temperature logging and acoustic velocimetry.
- November 1995 – May 1995* Winter field experiment on Lake Krasnoye (North-Western Russia): investigation of thermal regime under ice cover: CTD cross-sectioning, long-period temperature logging, current velocity measurements.
- June 1991 – October 1991* Joint Field Experiment of the Hydrographical Service and of the Northern Geophysical Expedition, Murmansk, USSR: Inves-

tigation of tides in the Barents and White Seas.

*August 1990 – September 1990* Expedition on board the research ship “Prof. Sergey Dorofeev” in the eastern part of the Baltic Sea.

## **Participation in International Scientific Meetings**

*1999-2015* > 75 oral and poster presentations at international symposia.

## **Reviews**

*Manuscript reviews for:* Aquat Ecol, Aquat Sci, Boreal Env Res, Canad J Fish Aqua Sci, Ecologica, Fund Appl Limnol, GRL, Global Change Biol, HESS, Int Rev Hydrobiol, Limnologica, Limnol Oceanogr, Water Resour Res, Water Qual Res J Can.

*Research proposal reviews:* Reviews for German Research Foundation (DFG), National Science Foundation (NSF), Canadian Foundation for Climate and Atmospheric Sciences (CFCAS).

## **Membership in Professional Organizations**

EGU, ASLO, IAHR, SIL

## **Languages**

English, German, Russian (native)

## **Web projects**

Worldwide lake modeling system FLake-Global ([www.lakemodel.net](http://www.lakemodel.net))