Alexey Katin

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North Carolina State University
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Research interests:

Dynamic numerical modeling within the Bayesian framework,
Data analysis,
Eutrophication in lakes, estuaries and rivers,
Ecological modeling of ecosystems under climate change and anthropogenic activities

Education:

- **Ph.D.** Civil, Construction, and Environmental engineering — 2016-present
  North Carolina State University (Raleigh, NC, USA)
  Advisor: Daniel R. Obenour
  Dissertation: Bayesian Modeling of Coastal Eutrophication to Inform Management Solutions for Hypoxia and Algal Blooms
- **M.S.** Hydro Science and Engineering — 2013-2015
  Technische Universität Dresden (Dresden, Germany)
  Advisors: Mitsuyo Saito, Kenji Okubo, Rudolf Liedl
  Thesis: Quantitative evaluation of submarine groundwater discharge in granitic coastal area with the use of ^{222}Rn as a natural tracer including diffusive flux from the benthic sediment
- **B.S.** Economics — 2006-2010
  National University of Science and Technology (MISIS) (Moscow, Russia)
  Advisor: Theodor B. Rubinshtein
  Thesis: Bank credit risk management at OAO “ALFA-BANK”
- **B.S.** Environmental Engineering — 2004-2009
  National University of Science and Technology (MISIS)
  Advisor: Yuri M. Kochnov
  Thesis: Development of recommendations for improving the drainage and the purification of gases systems for arc shaft furnace JSC “Severstal” in order to reduce energy costs for purification

Positions held:

- Graduate Research and Teaching Assistant — 2016-present
  North Carolina State University
- Documentation Technician — 2014-2014
  Helmholtz-Zentrum Dresden-Rossendorf (Dresden, Germany)
- Marketing Executive — 2010-2013
  Bosch Rexroth (Moscow, Russia)
- IT Technician — 2005-2010

Equestrian centre “Bitsa” (Moscow, Russia)

Scholarly works:

1. Katin, A., Del Giudice, D., Obenour, D.R. (2019). Modeling biophysical controls on hypoxia in a shallow estuary using a Bayesian mechanistic framework. *Environmental modeling and software*, 120.
2. Scavia, D., Bertani, I., Obenour, D.R., Turner, R.E., Forrest, D.R., Katin, A. (2017). Ensemble modeling informs hypoxia management in the northern Gulf of Mexico. *Proceedings of the National Academy of Sciences*, Vol. 114, 8823-8828.

Presentations:

1. Katin, A., Obenour, D.R., Del Giudice D “Contrasting nutrient management implications from statistical and process-based estuary phytoplankton models”, 25th Biennial Conference of the Coastal and Estuarine Research Federation (CERF). Mobile, AL. November 2019.
2. Katin, A., Obenour, D.R., Del Giudice, D. “Development and application of a probabilistic hypoxia forecasting model for the Neuse Estuary”, Water Resources Research Institute (WRRI) Annual Conference. Raleigh, NC. March, 2019.
3. Katin, A., Del Giudice D., Paerl, H.W., Obenour, D.R. “Modeling biophysical controls on hypoxia for the Neuse River Estuary using a Bayesian framework”, Estuarine and Coastal Modeling Conference (ECM15). Seattle, WA. June 2018.
4. Katin, A., Obenour, D.R. “Hypoxia and algal bloom modeling for the Neuse River estuary”, North Carolina Sea Grant Conference. Raleigh, NC. April 2017.

Publications at North Carolina Sea Grant *Coastal Watch*:

1. Researchers Forecast Healthier Neuse River Oxygen Levels, 2019
2. Tropical Systems Disrupt Neuse River Oxygen Levels, 2018
3. Model Forecasts Severe Hypoxia through August in Neuse Estuary, 2018
4. Forecasting Hypoxia, Algal Blooms for the Neuse River Estuary, 2016

Teaching/Training Experience

Teaching assistant for CE 383, Hydrology and Urban Water Systems during Spring 2018, 2019, 2020 and Fall 2018. Helped students at problem sessions and graded homeworks.

Software Experience:

Modeling: R, Stan, ArcGIS, GRASS, MATLAB, QUAL2K, WEAP, IRIC, Lindo, Minteq
Web: HTML, Gauss, First spirit, Joomla, Bitrix, WordPress
Graphics: Photoshop, Illustrator, InDesign, Corel, GIMP