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Семинар-тренинг "Application of System Dynamics Tools to Ecological Modelling of Lakes with Focus on the Eutrophication Process" - Семинар-тренинг "Application of System Dynamics Tools to Ecological Modelling of Lakes with Focus on the Eutrophication Process" - НИЛ гидроэкологии Биологического факультета БГУ.

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04-02-2020, 12:24 # [hydrobio](#)

3 февраля 2020 г. на биологическом факультете БГУ состоялся открытый международный семинар-тренинг НИЛ гидроэкологии "Application of System Dynamics Tools to Ecological Modelling of Lakes with Focus on the Eutrophication Process"

Спикером семинара выступил известный ученый dr. Ali Erturk, professor of aquatic sciences, Istanbul University, Turkey. В семинаре приняли участие сотрудники Nature Research Centre, Vilnius, Lithuania, д-р Ричардас Пашкаускас (зав. лабораторией альгологии и экологии микроорганизмов), д-р Йонас Мажейка (зав. лаб. ядерной геофизики и радиозоологии), сотрудники БГУ, Минприроды, ЦНИИКВР и др.

Summary

Mechanistic models based on mass and/or energy balance are useful for

- Analysing how an ecosystem works and identifying its key processes
- Answering "what if" questions such as
 - How the ecosystem will react to climate change?
 - What would happen if the external nutrient loads to a lake would change?
 - How long would the recovery of a eutrophied lake take?
 - How effective would several restoration efforts be?

Mechanistic modelling is promising method to analyse such questions, however any model should describe the particular ecosystem and the problem to be analysed properly. This is why, some studies necessitate the development and use of ecosystem specific ecological model rather than traditional water quality model, where all the computational infrastructure is already available, and in many cases even for free. However, once a specific model is needed to be developed there are many difficulties to write a computational infrastructure such as the modelling software with all of its numerical models, algorithms, error handling, etc.

The aim of this short seminar was to offer an alternative, where graphically based system dynamic tools will be explained that ease the task a lot once a conceptual model is developed. The seminar will consist from two parts:

Part one: Concepts of system dynamic models and how to develop a conceptual model and populate it with mathematical equations based on system dynamics methods

Part two: How to implement a simple ecosystem model using graphically based system dynamic tools without (or with very little) coding.

Application of System Dynamics Tools to Ecological Modelling of Lakes with Focus on the Eutrophication Process:
[презентация](#)



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