NEW TRENDS IN THE ECOLOGICAL AND BIOLOGICAL RESEARCH

International scientific conference

Book of Abstracts

University of Prešov, Slovak republic

Organizer:
University of Prešov
Faculty of Humanities and Natural Sciences
Greek-Catholic Theological Faculty
Faculty of Orthodox Theology

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Multispectral control of water bodies for biological diversity with the index of phytoplankton

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Abstract

Water protection of natural water bodies are complex systems that include roses, committed by inorganic and organic matter, suspended particles of different origin, aquatic organisms and so on. When water pollution is making them matter or energy that changes the functioning of aquatic ecosystems, energy flows and materials, performance and number of bio-tech populations. Water pollution and complex human impact on water bodies leads to changes in the concentration of dissolved substances may exceed the maximum permissible value; changes in the concentrations of suspended particles and the ratio between the volume concentration of particles of certain types; changes in populations of aquatic organisms in aquatic ecosystems. In the result would change the properties of the water body and the risks to living resources and ecosystem health.

One of the integral parameters of water pollution is the volume concentration of part-NOC certain types and relationships between them, which describes the state of aquatic ecosystems. Investigation of optical-physical parameters of suspended particles could be based on the scattering indicatrix characterizing parameters averaged particle environment (when using deep mode) or separate particle parameters (using scanning flow cytometry); besides particle parameters may be defined by their images obtained by CCD-camera in running the measuring cell.

Improved mathematical models of population dynamics in aquatic ecosystems phytoplankton through a system of recurrent equations that allowed consideration of phytoplankton depends on temperature, light exposure, concentration of nutrients and toxic substances. A mathematical model to simulate the change ratio relative populations of phytoplankton in the water pollution and evaluate integrated pollution characteristics based on changes Simpson index and Shannon.

A new method of measuring television multispectral eco-logical control of water facilities for phytoplankton parameters that reliably assess the condition of the ecosystem water body.

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