

# **Classification of continental water bodies by the spectral variability types with using neural net modeling**

A. Shevyrnogov (1), M. Tchernetsky (1)

(1) Institute of Biophysics of SB RAS, Krasnoyarsk, Russia, [maxim@ibp.ru](mailto:maxim@ibp.ru)

Satellite monitoring is the most effective method for estimation of the state of inner water bodies. The state is estimated by the three main optical active components of water – phytoplankton, dissolved organic matter and suspended mineral matter. The most important factor is the chlorophyll concentration of phytoplankton because it depends on levels of blooming in reservoir and levels of anthropogenic influence. Well known that waters of continental lakes are optically complex. That is why ocean type of analysis must not be used for them. In this work results of classification of Krasnoyarsk reservoir waters by the ISODATA method and neural net are presented. For these purposes 8-days satellite data of MODIS/TERRA was used. Finely with the help of the ISODATA method 5 spectral variability types were obtained. Also in this work results of effective processing of complex satellite and ground truth data with the help of neural net modeling are presented. Spatial changing of spectral characteristic is corresponded to ground truth data of chlorophyll concentration.