



Marine and ice landscapes of the Arctic and Sub-arctic in the course of towering industrial activity: ability of the management with using documentation facilities of satellite ecological criminalistics

Vladimir Melentyev (1,2), Konstantin Vladimirovich Melentyev (3), Lasse Herbert Petterssen (4), and Tatiana Andreevna Zakharova (1)

(1) State University of Aerospace Instrumentation (SUAI) – St. Petersburg, Russia, (2) Nansen Int. Environmental and Remote Sensing Centre (NIERSC) – St. Petersburg, Russia, (3) State Academy of Customs – St. Petersburg, Russia, (4) Nansen Environmental and Remote Sensing Centre (NERSC) – Bergen, Norway

In our studies we are following for the classification of the marine and ice landscapes of the Arctic that was suggested by prof. Ye.S. Korotkevich who had provided summarizing results of the long-term in situ field experiments and airborne studies that was fulfilled by scientists of Arctic and Antarctic Research Institute (AARI) under his leadership in Russian Arctic after the 2-nd World War. But satellite multispectral observations show significant temporal and spatial modification of the suggested scheme especially for Arctic ice landscapes that had occurred in nowadays due to the climate change and anthropogenic press.

Design main principle and rules of satellite ecological criminalistics - science of crime detection of ecocatastrophe and incidents on sea and fresh waters with using aerospace survey as well for the control, for the management and the preventing of ecological instability of the marine and lakes ecosystems was done by Academician Kirill Kondratiev together with his apprentices and follower in 1970-s.

In frame proposed paper we shall present results of our comprehensive satellite-airborne studies of the marine and ice landscapes as well discuss the incidents that happened in Arctic inside the inland and international waters in past and present days and were revealed with using multispectral remote sensing. But for all that we need to mention that our contemporary investigations are based on the all-weather satellite ERS-1/2 - Envisat – RADARSAT SAR survey archived since 1990-s by SUAI and NERSC/NIERSC.