



## **Variability of carbonate system parameters in estuaries and on the shelf of east coast of Asia**

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In connection with global warming of a climate it is necessary to receive additional information on transformation of a biogeochemical cycle of carbon in a coastal zone of World ocean. Results of observations over spatial variability of carbonate system parameters in the large rivers estuaries of the World located in various climatic zones represent special interest.

In order to check a hypothesis about growth of intensity of absorption  $\tilde{N}\hat{I}_2$  by sea water as approaching the Arctic areas of ocean. We generalized the given results of observations over spatial-temporal variability of carbonate system parameters in the following estuaries on east coast of Asia:

1. Anadyr River - Bering Sea, a polar climatic zone; 2. Amur River - Sea of Okhotsk, a subpolar climatic zone; 3. Razdolnaya River - Sea of Japan, the moderate climatic zone; 4. Yangtze River - East China Sea, a subtropical climatic zone; 5. Mekong River - South China Sea, an equatorial climatic zone.

On the basis of calculations of annual balance of carbon on ranges in surface and near bottom water it was estimate a phytoplankton role in absorption  $\tilde{N}\hat{I}_2$  from an atmosphere and the subsequent burial of carbon in bottom sediments.

It is established, that spatial variability of distribution of carbonate systems parameters in water and carbon fluxes between water and air depends on development of eddy structures in currents of with cyclonic and anticyclonic direction.

Presence of biogeochemical barriers in estuaries forms the steady ordered structures

of spatial distribution  $C_{org}$ , both inside of water masses, and on a surface of bottom sediments.

The analysis of all scientific materials has allowed concluding that for assessment of scales of seasonal and small-scale variability of a biogeochemical cycle of carbon on a shelf of the World Ocean we need the new methodology of synchronous registration for short-term fluctuations of hydrodynamical, hydrochemical and biogeochemical processes in marine environment.