

**Methods and means of organization of remote acoustic monitoring
of the Black Sea and Mediterranean**

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During last years it becomes inevitable that further progress in World Ocean studies is possible only with the use of principally new methods and means of ocean environment monitoring. The most useful can be the construction of hydroacoustical equipment for remote monitoring of ecological and hydrophysical processes for example in the Black Sea and Mediterranean. It is necessary to control, mainly, circulation the process of formation and variability of thermohaline structure, distribution of natural and anthropogenic particulate material, hydrochemical parameters, etc. The propose of observational system can be settled in case we can solve the following major tasks:

-to determine major mechanisms of sound dispersion, their specific peculiarities and their role in overall dispersion phenomenon;

-to access space-time structure of smallscale hydrophysical disturbances and their acoustic characteristics;

-to develop models of sound dispersion due to irregularities of different physical nature;

-to create physical base for remote sensing techniques of hydrofrequency acoustical diagnostic of hydrophysical processes;

-to study the possibility of monitoring of H2S boundary;

-to create a data base for forecasting conditions of sound dispersion in the water.

At present time, we developed a model of sound dispersion due to physical irregularities of sea water that takes into account it's complexity, spectral structure of irregularities and other factors. We have also studied the influence of temperature, salinity, current velocity peculiarities on characteristics of sound dispersion. Experimental studies have been conducted to investigate sound dispersion on temperature irregularities in a tank. These experimental results have confirmed theoretical studies.

Concerning experiments, special equipment and methodology have been developed for field acoustical measurements. Studies of sound dispersion characteristics and their relation to oceanological field structure has been performed, also.