

## Protocol No 13/ 26 April 2017

A report “ General strategy for modeling of European seas. Development and making of the Black sea model” was presented by Ass. Prof. Svetla Miladinova, Ph. D. from the Joint Research Center, Directorate D – Sustainable resources, water and sea resources, Ispra, Italy. The speaker started her talk by several words about the group for modeling of seas at the Directorate D in Ispra, Italy. Then Dr. Miladinova described the Black sea model that consists of two parts; hydrological model of the currents in the Black sea accounting for the influence of Danube river and other rivers; biogeochemical model that models the water salinity and evolution of water conditions through the seasons of the year. These conditions influence growth of seaweed, etc. The presentation ended by a description of possibilities for future projects connected to the Black sea models.

## Discussion

Numerous questions have been asked. Assoc. Prof. Srdetoslav Nikolov asked about the influence of human activity on the sea water circulation. Dr. Miladinova answered that the human activity influences heavily sea resources and water circulation. Assoc. Prof. Maria Datcheva asked about the connections between the Oceanology Institute of BAS and the models of Black sea. Dr. Miladinova answered that there is no connection up to now. Dr. Miladinova noted several Internet sites where data about the parameters of different seas can be obtained. Among them are the site of the Copernicus project as well as the site of the European commission devoted to the seas. Dr. Georgi Simeonov asked if the influence of the Mediterranean sea and Marmara sea are accounted in the models connected to the Black sea. Dr. Miladinova answered positively to this question and described how this influence is accounted for. Dr. Slavcho Slavchev asked about the connection between the hydrological and biogeochemical models of the Black sea. Dr. Miladinova described the connection between the two models and gave more information about the boundary conditions used in the models. Assoc. Prof. Petar Djondjorov asked about the accounting of changes of the temperature, winds, and nutrients in the boundary conditions. Dr. Miladinova answered that these changes are accounted by the boundary conditions of the models. Prof. Marinski asked how good are the models in the coastal zone and how the model account for the self-cleaning of the sea. Dr. Miladinova answered that the models work also for the coastal zone but there a smaller size of computing grid is needed. The self-cleaning of the seas is accounted for through the cleaning effect generated by the zooplankton.

The interest to the seminar was large. Many researchers from the Institute of Mechanics and other research organizations attended the seminar at Hall 200 of the Institute of Mechanics.

Head of the seminar: Prof. Nikolay K. Vitanov, Ph. D., D. Sc.