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Sea wave observing system – initial results

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Bulgarian National Operational Marine Observing System (NOMOS) is a module of MASRI - Infrastructure for Sustainable Development of Marine Research and Participation in the European Infrastructure Euro-Argo, a project of the National roadmap for scientific Infrastructure (2020 – 2027) of Republic of Bulgaria. NOMOS consist of six components, one of which is a waves and currents monitoring system managed in collaboration by the Institute of Oceanology, Bulgarian Academy of Sciences (IO-BAS) and the National Institute of Meteorology and Hydrology (NIMH). The development of the waves observing system started in 2020 with the deployment of six moored wave buoys, three by IO-BAS and three by NIMH. Next year another three wave buoys were deployed by NIMH. The deployment positions were chosen to provide optimal coverage of the Bulgarian Black Sea coast. The buoy measurements are transmitted using GPRS or satellite communications and are stored in databases both at the Bulgarian National Oceanographic Data Center and at the NIMH data center. WEB sites were developed to deliver real time wave data to stakeholders. The wave observing system has been in operation for over a year and sufficient data has been collected for an initial analysis. During the operation period, experience was gained in maintaining the system in order to provide reliable sea waves data. Biofouling and vandalism are assessed as the main factors influencing system performance. The wave observing system is a unique source of in-situ wave data in the Black Sea that provides real-time wave data and long series of data for science and marine industry. In-situ wave data are also distributed through CMEMS and used for the assimilation in wave models and quality assessment of forecasts and reanalyzes in Copernicus marine services.