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Practical applicability and preliminary results of the Baltic Environmental Satellite Remote Sensing System (SatBaltic)

B. Wozniak (1,3), M. Ostrowska (1), K. Bradtke (2), M. Darecki (1), J. Dera (1), J. Dudzinska-Nowak (4), L. Dzierzbicka (1), D. Ficek (3), K. Furmanczyk (4), M. Kowalewski (1,2), A. Krezel (2), R. Majchrowski (3), M. Paszkuta (2), J. Ston-Egiert (1), M. Stramska (1), and T. Zapadka (3)

(1) Institute of Oceanology, Polish Academy of Sciences, Powstańców Warszawy 55, PL-81-712 Sopot; Poland (ostra@iopan.gda.pl), (2) Institute of Oceanography, University of Gdańsk, al. Marszałka Piłsudskiego 46, PL-81-378 Gdynia, Poland, (3) Institute of Marine and Coastal Sciences, University of Szczecin, ul. Mickiewicza 18, PL-70 -383 Szczecin, Poland, (4) Institute of Marine and Coastal Sciences, University of Szczecin, ul. Mickiewicza 18, PL-70 -383 Szczecin, Poland

SatBaltic (Satellite Monitoring of the Baltic Sea Environment) project is being realized in Poland by the SatBaltic Scientific Consortium, specifically appointed for this purpose, which associates four scientific institutions: the Institute of Oceanology PAN in Sopot - coordinator, the University of Gdańsk (Institute of Oceanography), the Pomeranian Academy in Słupsk (Institute of Physics) and the University of Szczecin (Institute of Marine Sciences). We present the first the results of the first year and a half of SatBaltic's implementation. The final result of the project is to be the creation and setting in motion of the SatBaltic Operational System (SBOS), the aim of which is to monitor effectively and comprehensively the state of the Baltic Sea environment using remote sensing techniques.

Various aspects of the practical applicability of SBOS to the monitoring of the Baltic ecosystem are discussed. We present some examples of the maps of the various characteristics of the Baltic obtained using the current version of SBOS, including algorithms and models that are still in an unfinished state. At the current stage of research, these algorithms apply mainly to the characteristics of the solar energy influx and the distribution of this energy among the various processes taking place in the atmosphere-sea system, and also to the radiation balance of the sea surface, the irradiance conditions for photosynthesis and the condition of plant communities in the water, sea surface temperature distributions and some other marine phenomena correlated with this temperature. Also given are results of preliminary inspections of the accuracy of the magnitudes shown on the maps.