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Monitoring the Levantine Basin through the use of multiple satellite remote sensing products

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The Oceanography Centre, of the University of Cyprus (OC-UCY) has been using a variety of satellite remote sensing products to monitor the Eastern Mediterranean Levantine Basin. The OC-UCY operates the CYCOFOS - CYprus Coastal Ocean Forecasting and Observing System at the OC-UCY, a satellite remote sensing module that daily processes satellite data for sea surface temperature (SST), Chlorophyll-a, light attenuation, detection for oil slicks and recently sea surface zooplankton and suspended matter. Within the general frame of the Global Monitoring for Environment and Security and within the framework of the operational oceanographic observing and forecasting systems in Europe and in the Mediterranean, since the end of 2001, the CYCOFOS HRPT ground receiving station has been providing regular remote sensing NOAA-AVHRR SST images of the Levantine Basin and of the Eastern Mediterranean Sea. Sea surface temperature data are also obtained from the MODIS sensor onboard TERRA and AQUA satellites. MODIS data are also used to provide chlorophyll-a, light attenuation, and total suspended matter (TSM) info both on a daily basis as well as monthly averages. The appropriate source data downloaded every day from NASA operational web archives and processed by special software which designed in OC-UCY. In addition MERIS data from ENVISAT satellite are used to provide chlorophyll-a and TSM concentration for coastal zones with high spatial resolution. Added value SAR images from EMSA CleanSeaNet, as well as data from MODIS are used by the OC-UCY to detect oil floating on the sea surface within the MEDSLIK oil spill model which was designed and is operated by the OC-UCY. MEDSLIK is a 3D oil spill model designed to predict the transport, fate and weathering of an oil spill and has been coupled operationally to the MFS-OPA, CYCOFOS, ADRICOSM, ROSARIO operational ocean forecasting systems, as well with the SKIRON weather forecasting system, for the Levantine, Adriatic, Central Mediterranean and the entire Mediterranean. Finally, AVISO geophysical data records from altimetry satellites T/P, JASON-1 and JASON-2, are used to provide forecasts for tides across the entire Mediterranean Sea. All satellite remote sensing products are available after processing through the Center's website, providing a broad overview of the conditions that exist in the Levantine Basin, as well as a tool for long-term time series monitoring of climate variability and change in the area.