MEDSLIK oil spill model recent developments

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MEDSLIK is a well established 3D oil spill model that predicts the transport, fate and weathering of oil spills and is used by several response agencies and institutions around the Mediterranean, the Black seas and worldwide. MEDSLIK has been used operationally for real oil spill accidents and for preparedness in contingency planning within the framework of pilot projects with REMPEC-Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea and EMSA-European Maritime Safety Agency. MEDSLIK has been implemented in many EU funded projects regarding oil spill predictions using the operational ocean forecasts, as for example the ECOOP, NEREIDs, RAOP-Med, EMODNET MedSea Check Point. Within the frame of MEDESS4MS project, MEDSLIK is at the heart of the MEDESS4MS multi model oil spill prediction system. The MEDSLIK oil spill model contains among other, the following features: a built-in database with 240 different oil types characteristics, assimilation of oil slick observations from in-situ or aerial, to correct the predictions, virtual deployment of oil booms and/or oil skimmers/dispersants, continuous or instantaneous oil spills from moving or drifting ships whose slicks merge can be modelled together, multiple oil spill predictions from different locations, backward simulations for tracking the source of oil spill pollution, integration with AIS data upon the availability of AIS data, sub-surface oil spills at any given water depth, coupling with SAR satellite data. The MEDSLIK can be used for operational intervention for any user-selected region in the world if the appropriate coastline, bathymetry and meteo-ocean forecast files are provided. MEDSLIK oil spill model has been extensively validated in the Mediterranean Sea, both in real oil spill incidents (i.e. during the Lebanese oil pollution crisis in summer 2006, the biggest oil pollution event in the Eastern Mediterranean so far) and through inter-comparison using drifters. The quality of the MEDSLIK oil spill model predictions depends on the quality of the meteo-ocean forecasting data that will be used. The guidelines set by the MEDESS4MS project to harmonize the meteo-ocean, oil spill and trajectory models input/output formats are implemented in MEDSLIK to suit the operational oil spill predictions. The output results of the trajectory predictions may available in the MEDESS4MS output standards (XML)and in ASCII, while the images in BMP or PNG, TIF,GIF, JPG (image), in KML (Google Earth).