Belgian intervention support tool in case of oil pollution

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Operational oil slick modeling at the Management Unit of the North Sea Mathematical Models (MUMM) started about 30 years ago. The aim is to support the Belgian teams involved in marine pollution and marine safety by developing contingency and emergency plans, and supporting combating units in the event of pollution at sea.

The current operational oil slick model of MUMM (FLOAT) can compute 2D trajectories of oil slicks (or any other objects) floating on the sea surface and drifting away under the influence of wind and water currents. The domain of FLOAT covers the eastern English Channel and the southern North Sea. It is forced with surface currents provided by MUMM's operational 3D hydrodynamic model and surface winds from the UK Met Office.

Over the years, FLOAT has proved its usefulness to track and backtrack major and/or mysterious slicks; to evaluate the threat for the coastline and other sensitive resources; to guide a patrol vessel to a slick (e.g. for sampling); and, more recently, to guide a vessel to the position of a satellite detection or to link an aircraft observation with a satellite detection. FLOAT is accessible through a user-friendly web-based interface to all agencies involved in the Belgian Intervention Plan for Pollution Response at Sea. All the contracting parties of the Bonn Agreement can also request drift simulations. FLOAT also provides forecast and backtrack trajectories of satellite detected oil spills that are made available for display to all EU Member States coastguard agencies via the EMSA CleanSeaNet service.

Finally, in the framework of the national project OSERIT, MUMM is currently developing a new generation of 3D oil spill drift and fate mathematical model. This new model should be tested in operational conditions by the end of 2011.

During this presentation, we will briefly introduce the current operational oil spill model, its applications and undergoing developments.