



High-resolution numerical model for predicting the transport and dispersal of chemicals resulting from accidental blowouts in the eastern English Channel

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The coupled MARS-particle tracking model model is developed to predict the transport and dispersal of contaminants resulting from representative hypothetical chemical spills in the eastern English Channel. With climatological forcing, the MARS circulation model realistically simulates many of the meso-scale features of the circulation including tidal currents and fronts. The spill model ingests MARS currents and employs a Lagrangian tracking algorithm to predict the motion of a large number of seeded particles, the sum of which form the chemical plume. Basic processes affecting the transport of chemicals and their fate (advection, sinking, evaporation, etc.) are included as parameters. Various scenarios of hypothetical blowouts of materials in different regions of the Channel are simulated and discussed as to their structure, transport and likelihood of coastal contamination. The ultimate objective is to develop an operational oil slick model forced with winds, air-sea interaction and tides.