



Co-funded by
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TRAINING SLIDES

FIRE MODEL



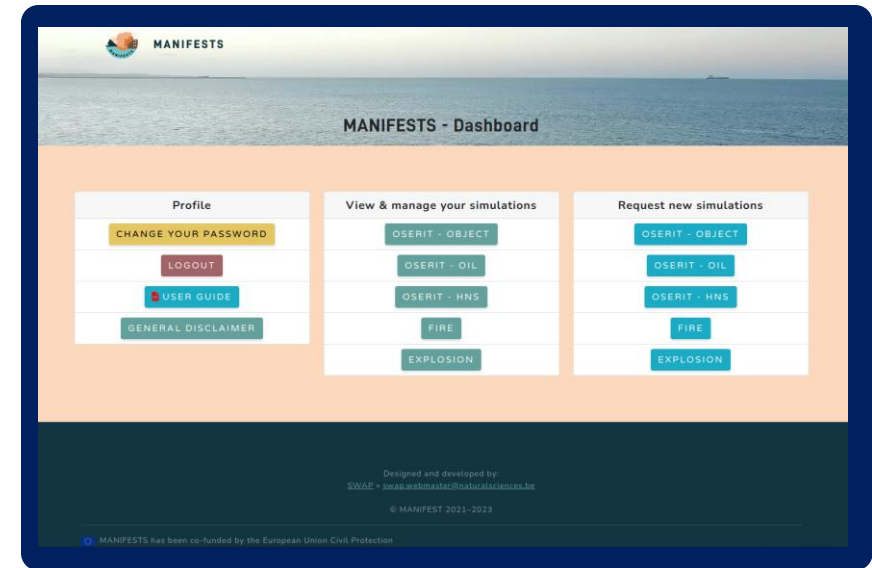
1 OVERVIEW OF THE TOOL

PROBLEM STATEMENT

In the event of an HNS slick catching fire, the consequences for humans and structures can be devastating. Developing a tool that quickly estimates the potential impact of such phenomena can aid responsible authorities in reacting swiftly and implementing measures to mitigate the impact, such as maintaining an appropriate safety distance for responders.

OBJECTIVE

The fire model aims to predict the effects of the fire of an HNS slick spilled on the water in an open environment.



DATA USED

- ✧ Wind speed, ambient temperature.
- ✧ Quantity release and area of the slick.
- ✧ Properties of the chemical (auto filled from the HNS database).

HOW IT WORKS

The web interface enables users to perform simulations directly online. By filling out a form with event-related information, users can obtain simulation results within seconds.

Both the form and simulation results are available from a web browser.

2 HOW IT WORKS & KEY RESULTS

USE CASE

To assess the impact of an HNS slick on fire. Responders can use it to assess a minimum safety distance to keep from a burning slick to not be exposed to the thermal fluxes that could harm them.

OUTPUT EXAMPLE

MANIFESTS Dashboard Listing

Start time (UTC): * 2024-08-19T10:50:00Z

Fire surface: * 50.0 m²

Volume: * 50.00 m³

HNS parameters

Hns: * 1-Butanol

Density: * 821.3 kg/m³

Combustion enthalpy: * 35900.0 kJ/kg

Vaporization enthalpy: * 706.277 kJ/kg

Specific heat capacity: * 2.3907 kJ/kg K

Boiling point: * 117.7 °C

Radiative fraction: * 22.0 %

Combustion yield: * 70.0 %

Advanced model parameters

Relative humidity: * 75.0 %

Air density: * 1.2243 kg/m³

SUBMIT SIMULATION

Designed and developed by:
SWAP - www.swapmodel.be
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