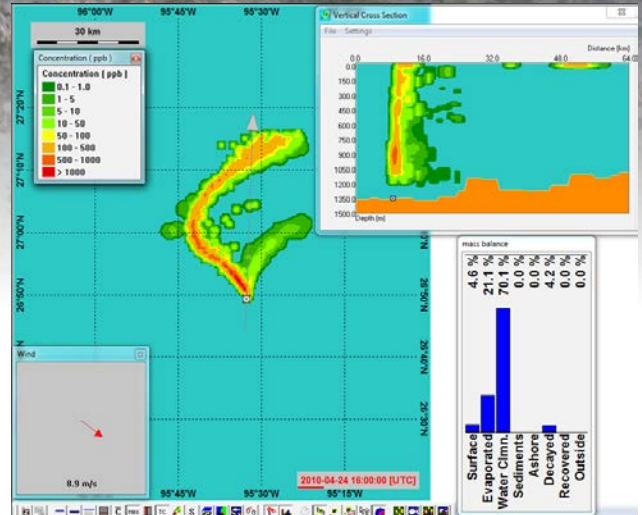


# The OSCAR model

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The OSCAR (Oil Spill Contingency And Response) model is a state of the art, 3-dimensional dynamic, simulation tool for planning and response for oil spills. The OSCAR model predicts the fate and effects of releases of oil and/or gas. Such releases may be either surface or subsurface, of short or continuous duration, and with variations in time. OSCAR provides insight into hydrocarbon transport, fate and effects during a release, and can simulate the results of different response strategies. Many of the modules in OSCAR have been developed through laboratory studies at SINTEF and field studies in temperate and Arctic areas.

OSCAR models oil as particles that:

- are advected by currents, winds, and turbulent diffusion
- undergo weathering (evaporation, dissolution, and dispersion)

Key features include:

- 3-dimensional modeling of oil the water column
- representation of oil by 25 pseudo-components
- extensive oil database with experimental weathering data
- stochastic simulations

- nearfield plume model for multi-phase deep and shallow-water releases
- tracking of gas for subsurface releases
- biological effects on marine organisms
- oil contact with different types of shoreline
- oil in ice-covered waters

Typical applications:

- Oil spill risk evaluation
- Oil spill response planning
  - mechanical recovery (booms and skimmers)
  - chemical dispersant application (surface applied or sub-sea injection)



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