

Models from MUMM used in the SEPRISE demonstration

Institution	Management Unit of North Sea mathematical models (MUMM) Belgian Royal Institute of Natural Sciences
Model Name	Optos_Wave
Characteristics	2 nd generation wave model based on HYPAS Refraction due to time varying depth taken into account in Belgian coastal waters
Area Covered	Sea Area: Greater North Sea (GNS), Southern Bight (SB), Belgian Coastal Zone (BCZ)
Variables Predicted	Wave spectra $E(f, \Theta)$ and indirect variables (1D spectrum $E(f)$, wave direction $\Theta(f)$, total wave energy, significant wave height H_S , low frequency energy E_{10} ...)
Operational / Pre-operational	Operational
Source of Atmospheric Forcing	UK Met Office
Length of Forecast	4 days ahead
How many forecast cycles per day, i.e. how often is the model run?	2 runs per day

Additional Information			
Numerical basis of the model	<table border="1" style="width: 100%;"> <tr> <td style="width: 30%;">Model Area</td> <td>GNS : Long 13.853°W Lat 48.226°N Long 18.707°E Lat 69.511°N SB Long 0.711°W Lat 49.904°N Long 4.326°E Lat 52.174°N BCZ Long 2.094°W Lat 51.012°N Long 3.578°E Lat 51.642°N</td> </tr> </table>	Model Area	GNS : Long 13.853°W Lat 48.226°N Long 18.707°E Lat 69.511°N SB Long 0.711°W Lat 49.904°N Long 4.326°E Lat 52.174°N BCZ Long 2.094°W Lat 51.012°N Long 3.578°E Lat 51.642°N
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	Number of grid points in X-Y axis	GNS : 48 rows (Y) ; 25 columns (X) SB: 26 rows (Y), 26 columns (X) BCZ: 137 rows (Y), 218 columns (X)		
	Number of vertical levels	irrelevant		
Resolution (° or km)	GNS : 50 km SB : 10 km BCZ : 500 m			
Computer used	Dec-alpha			
Validation method	Comparison with buoy and remote sensing data			
Use of model	X	Research	X	Public
	X	Governmental		Commercial
		Private		

Institution	Management Unit of North Sea mathematical models (MUMM) Belgian Royal Institute of Natural Sciences
Model Name	Optos_nos
Characteristics	3D model for tide, wind and density driven circulation in the North Sea. Implementation of the COHERENS model
Area Covered	Sea Area: From 4°W to 57°N
Variables Predicted	3D current field, sea surface elevation, temperature and salinity
Operational / Pre-operational	Operational
Source of Atmospheric Forcing	UK Met Office
Length of Forecast	5 days ahead
How many forecast cycles per day, i.e. how often is the model run?	2 runs per day (depending on availability of the meteorological forecast)

Additional Information				
Numerical basis of the model	Model Area		Lon 4°W Lat 48.5°N Lon 10°E Lat 57°N	
	Number of grid points in X-Y axis		205 rows (Y) 157 columns (X)	
	Number of vertical levels		20 sigma levels	
Resolution (° or km)	2.5' in latitude 5' in longitude			
Computer used	Dec-alpha			
Validation method	Comparison with in-situ data (tide gauge data, light-ships data for SST, Belgica data for SST and sea surface salinity) Comparison with remote sensing data (SST) Comparison with other model (UKMO) results for sea surface and sea bottom temperature			
Use of model	*	Research	*	Public
	*	Governmental		Commercial
		Private		