EMODNET Oil Platform Leak Bulletin

The EMODNET Oil Platform Leak Bulletin contains the forecast/scenario information on the fate and transport of oil leaks emanating from fixed platforms.
The bulletin is built upon MyOcean products (http://www.myocean.eu and http://gnoo.bo.ingv.it/myocean) and the ECMWF forecast surface atmospheric variables, winds and air temperature.

Date 28 July 2014

Preface

At 7:29 of July 28, 2014 it was communicated that:
On Sunday 27/07/2014 at 05:05 CET a helicopter bringing vital supplies to an active drillship "Magna Belgica" in the wider area of 'Caliph prospect' off the coast of Libya encountered a technical failure and collapsed on the drillship starting a fire and crude oil leak immediately. The spill was contained within a duration of 5 hours with total of 50 tons crude oil loss at sea surface. After initial repairs the vessel set sail for inspection in Naples. Reaching the strait of Messina around 06:15 CET this morning, the drillship experienced engine and rudder failure leading to a collision with a cargo ship. The drillship was heavily damaged and will have lost a total load of 2000 tons of diesel fuel oil by 10:20 CET today (28/07/2014).
Please investigate the fate of the spill and possible consequences (see details in input form) for both the initial leak at Caliph prospect and the larger loss of diesel fuel oil in the strait of Messina.

Bulletin content

The bulletin presents the forecasts of the currents, wind and oil transport and dispersion at the surface for 120 hours after the initial spill supposed to have occurred on the 27/07/2014 at 05.05 CET or 03:05 UTC.

Data and methods:

The position of the oil spill is supposed to coincide with the drillship position LAT = 33° 13.58' N, LON= 15° 54.30' E, in the proximity of the 'Caliph prospect' off the the coast of Libya. The overall amount of crude oil released is set to 500 Tons with API 26 value. The oil is released as a continuous oil spill during 5 hours starting at the beginning of the simulation. Picture illustrate the position of the oil spill release:

The oil spill evolution is shown for a small rectangle around the initial oil spill release.

Description of the results

Release point of the oil spill (27/07/2014 05:00 CET, figure 1)
Surface currents (at 05:00 CET 27/07/2014) are north-eastward (figure 1), reaching a velocity of 0.2 m/s in the proximity of the drillship position. Wind is south-westerly and reaches a velocity of 1.6 m/s.

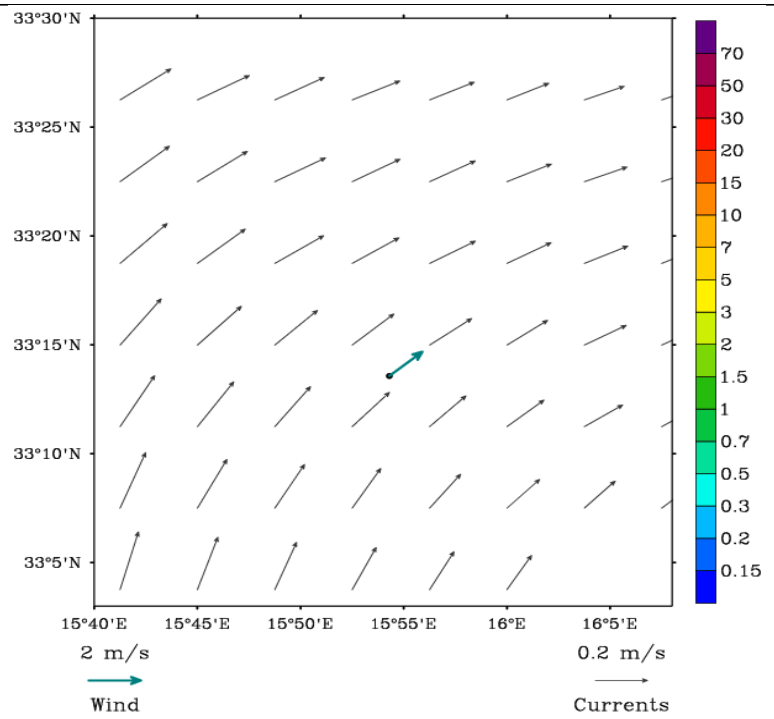

Figure 1: Surface currents **(black arrows)** and wind **(green arrow)**, at 06:00 CET 27/07/2014. Position of the drillship is highlighted with the black dot.

Oil spill after 24 hours (28/07/2014 05:00 CET, figure 2)
Surface currents are south-westward and their intensity is decreased with respect to 27/07/2014 (now less than 0.1 m/s). Winds are north-easterly wind reaching an amplitude of 5 m/s. In the first 24 hours of simulation the oil slick oil moves north-eastward.

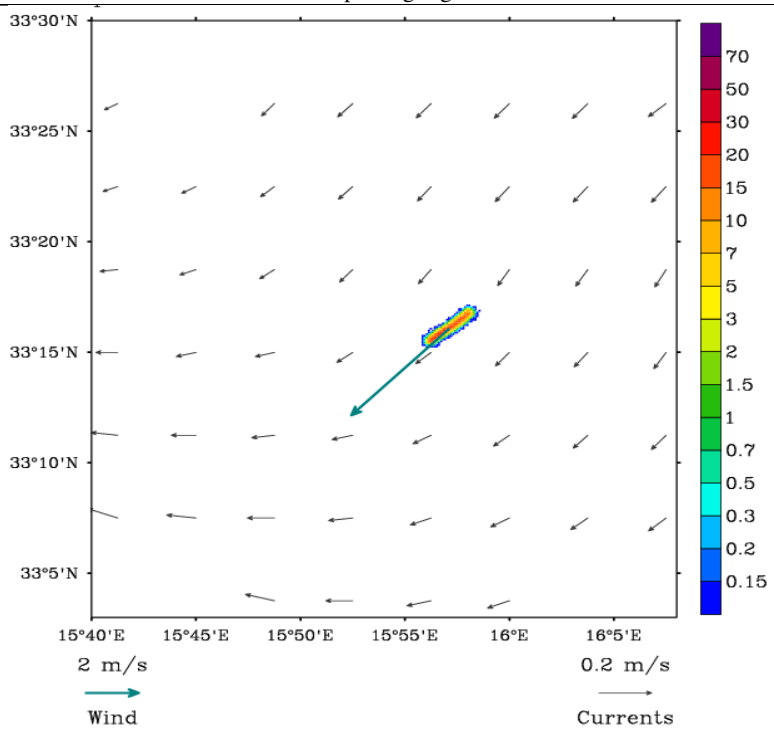

Figure 2: Position of the oil slick at 05:00 of 28/07/2014, oil concentration is given in units of ton/km^2. Surface currents **(black arrows)** and wind **(green arrow)** are displayed at 05:00 CET for 28/07/2014.

Oil spill after 48 hours (29/07/2014 05:00 CET, figure 3)
Surface currents are meanly north-westward (0.1 m/s); the wind is north-easterly and its intensity is about 1.8 m/s. The oil spreads south-westward.

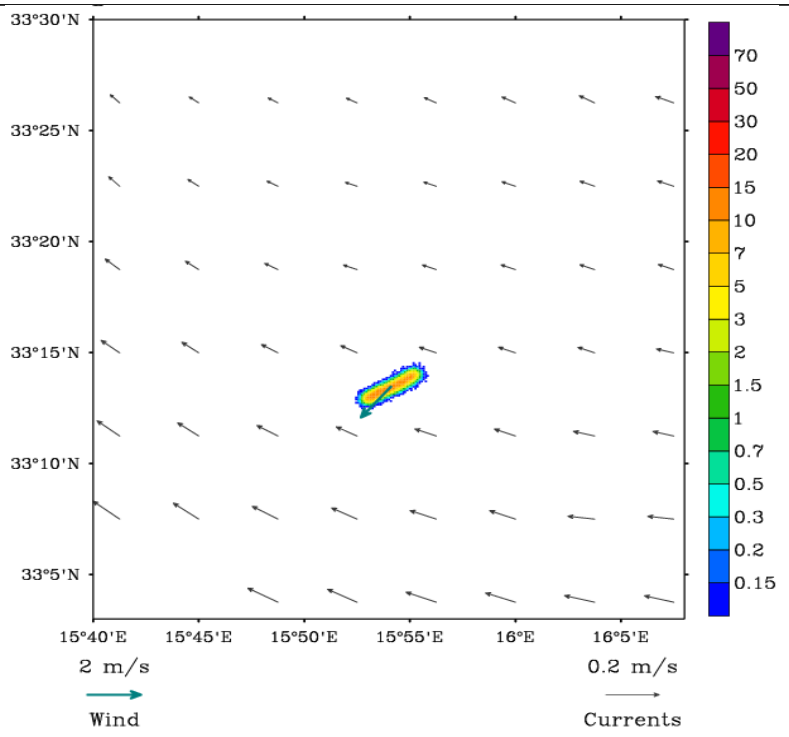

Figure 3: Position of the oil slick at 05:00 29/07/2014, oil concentration is given in units of ton/km^2. Surface currents **(black arrows)** and wind **(green arrow)** are displayed at 05:00 CET for 29/07/2014.

Oil spill after 72 hours (30/07/2014 05:00 CET, figure 4)
Currents are northward and their intensity increases respect to the previous days (large than 0.2 m/s). The wind is south-easterly and its intensity is about 0.6 m/s. The oil moves northward.

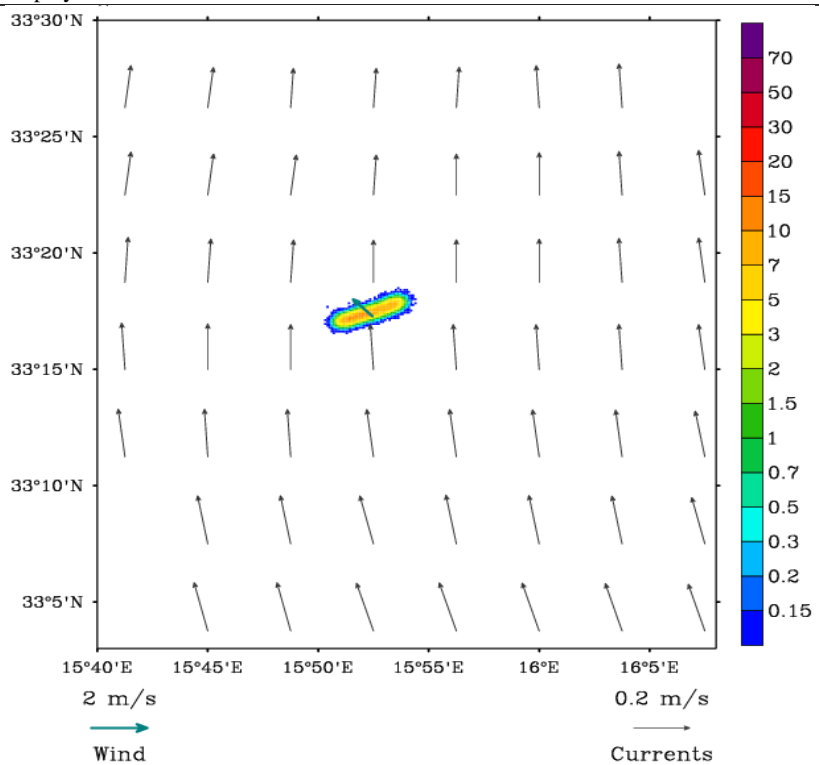

Figure 4: Position of the oil slick at 05:00 30/07/2014, oil concentration is given in units of ton/km^2. Surface currents **(black arrows)** and wind **(green arrow)** are displayed at 05:00 CET for 30/07/2014. .

Oil spill after 96 hours (31/07/2014 05:00 CET, figure 5)
Surface currents are divergent around the oil slick and weak (~0.03 m/s); the wind is north-easterly and its intensity is about 4 m/s. The oil continue to spread northward.

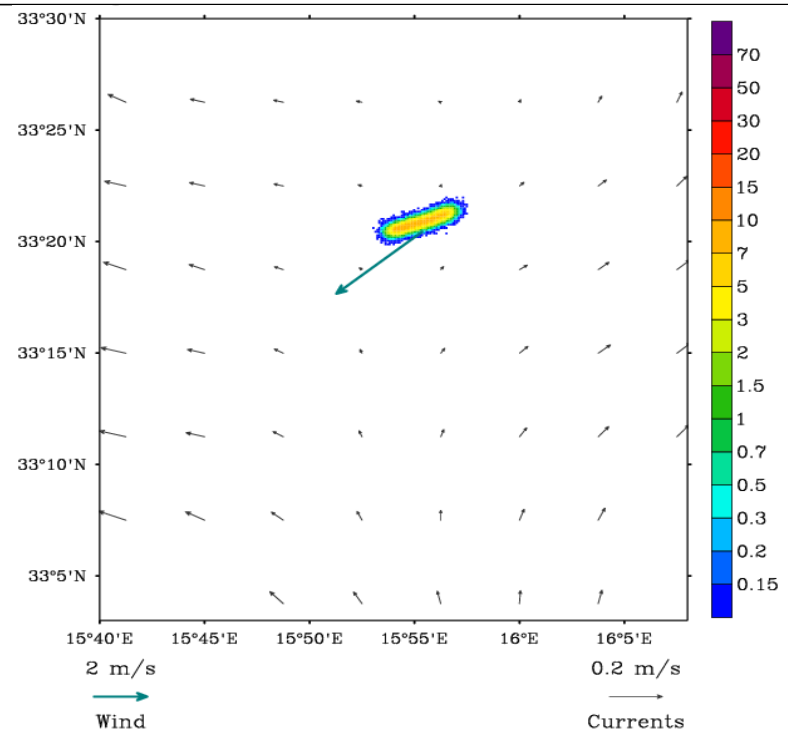

Figure 5: Position of the oil slick at 05:00 31/07/2014, oil concentration is given in units of ton/km^2. Surface currents **(black arrows)** and wind **(green arrow)** are displayed at 05:00 CET for 31/07/2014.

Oil spill after 120 hours (01/08/2014 figure 6)
Currents are northeastward in the proximity of the oil slick and their intensity has increased with respect to the previous day, being now ~0.1 m/s. The wind is north-easterly and its intensity is about 0.7 m/s. The oil moves now southward.

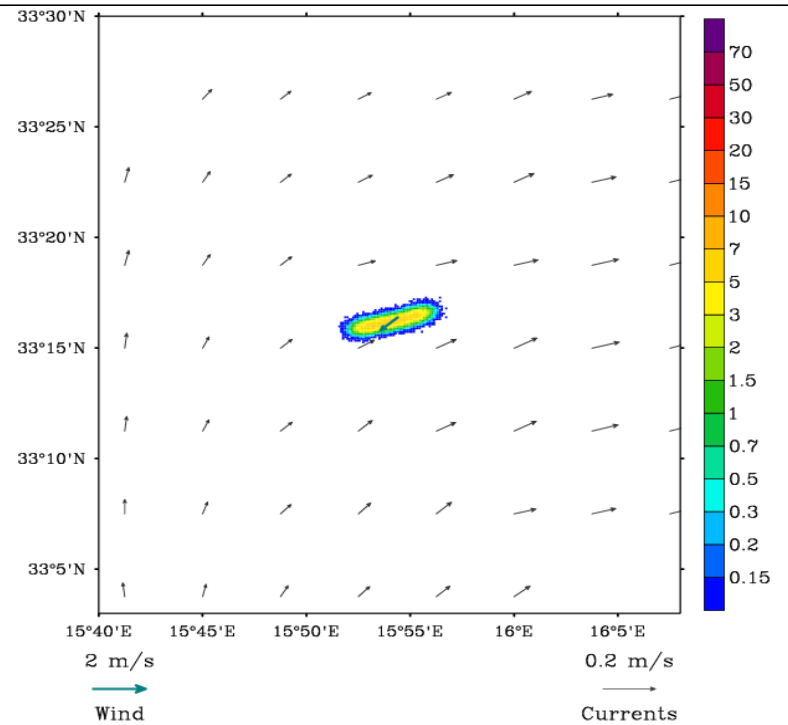

Figure 6: Position of the oil slick at 05:00 01/08/2014, oil concentration is given in units of ton/km^2. Surface currents **(black arrows)** and wind **(green arrow)** are displayed at 05:00 CET for 01/08/2014. .