Hellenic National Meteorological Service
www.hnms.gr

37th EWGLAM and 22nd SRNWP Meeting
5 -8 October 2015
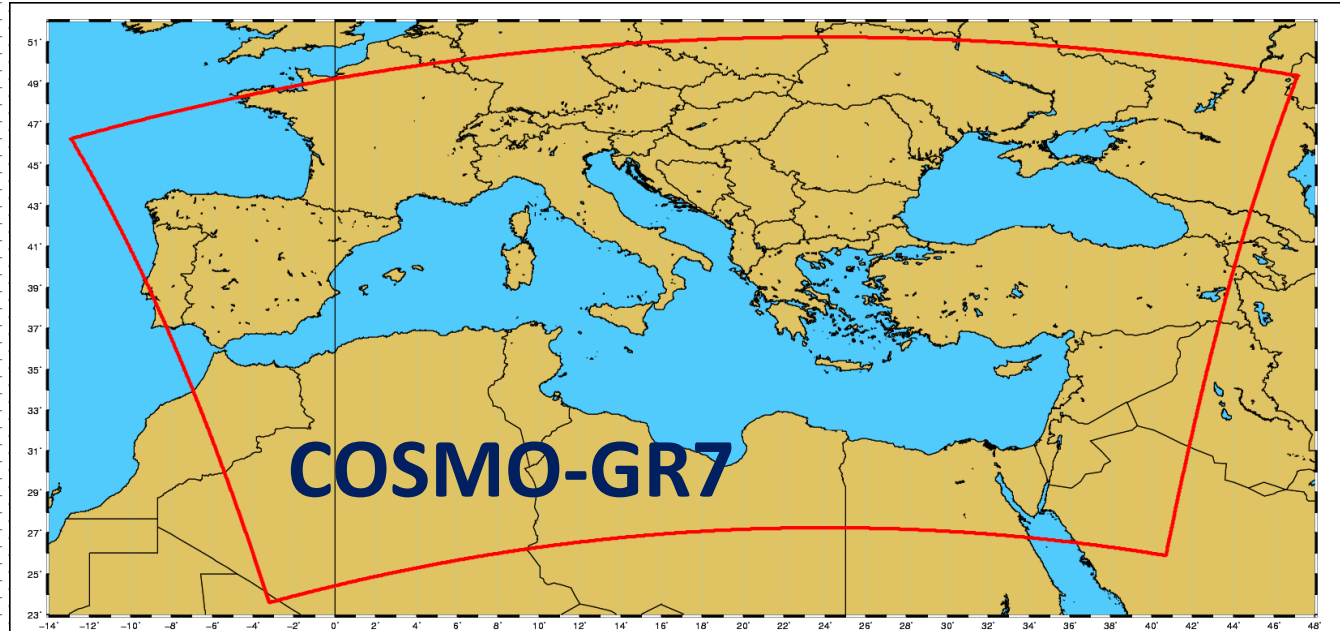**Belgrade, Serbia**

SRNWP Consortia in Europe

HNMS: Numerical Weather Prediction Activities
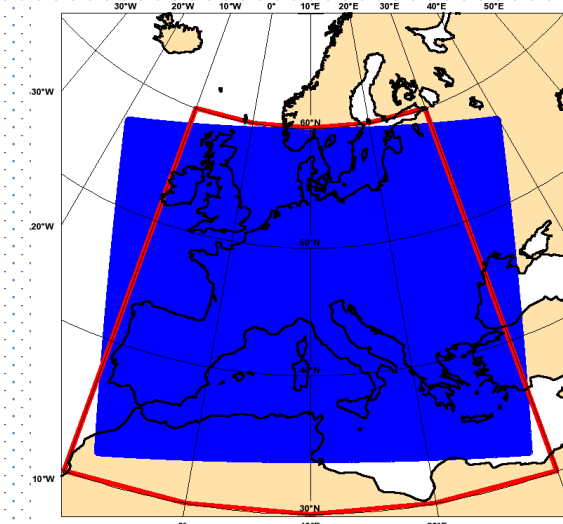
Current (Operational) status

COSMO-GR runs exclusively at ECMWF (version 5.0) twice a day (00h/12h))

- 7 km resolution over Mediterranean, and
- 2.2 km resolution over Greece
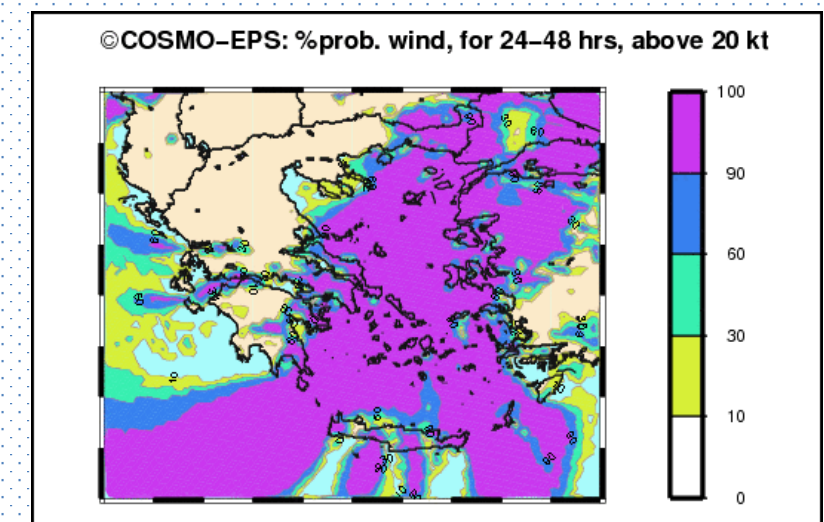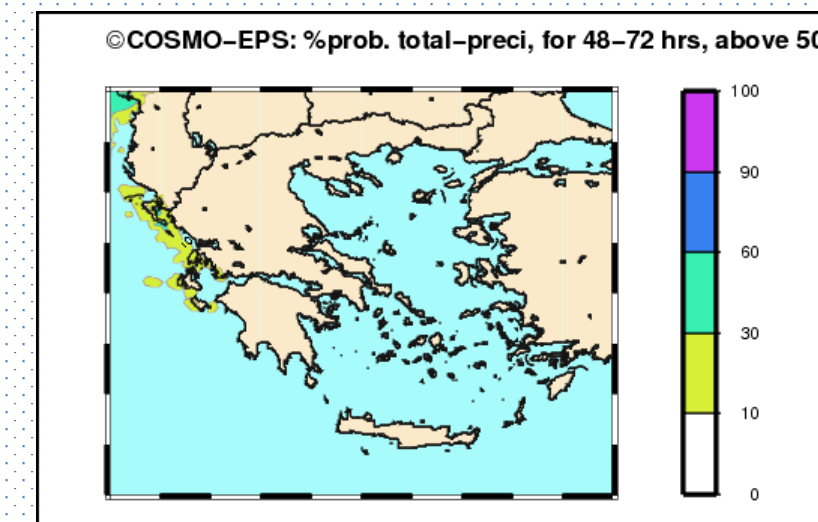

COSMO-GR7

COSMO-GR2

Probabilistic products
Based on COSMO-LEPS outputs

- Suite runs at ECMWF
- 16 Representative IFS-EPS Members driving the 16 COSMO-model integrations
- Δx ≈ 7 km; 40 ML; fc+132h

©COSMO–EPS: %prob. total–preci, for 48–72 hrs, above 50

©COSMO–EPS: %prob. wind, for 24–48 hrs, above 20 kt

Model	Resolution	Grid Points	Vertical Levels	Initial times	Forecast ranges (h)	Data Assimilation	Model providing LBC data	LBC update interval (h)
COSMO-GR7	0,625° ≈7Km	649 X 393	60	00/12	+72hr	Nudging	ECMWF/IFS	3hr
COSMO-GR2	0,02° ≈2.2Km	501 X 401	60	00/12	+48hr	None	COSMO-GR7	1hr

Near future plans

- Port and run operationally COSMO at the recently formed Greek hypercomputer institute GrNet (on an IBM xeon-based system).
- Initiate trial cycle with ICON boundary conditions
- Expand 2km domain to a largest extend within the given resources.
- Keep up with new COSMO releases

The system, named "ARIS", based on the platform NeXtScale IBM incorporates the latest generation processors Intel® Xeon® E5 v2 technology Ivy Bridge, and offers computing power of nearly 180TFlops.

With 426 computational nodes, offers a total of over 8500 processing cores (CPU cores) interconnected network FDR Infiniband, an interface technology that offers low latency and high bandwidth. Additionally, it offers high performance storage, sized approximately 1 Petabyte, based on the IBM GPFS.

## COSMO in other operational applications – Current Status and Plans

### Wave Model (WAM)
Current status

- COSMO model forecasted wind is used as WAM's input. WAM runs over Mediterranean and Black Sea (5km resolution, with 24hrs initial state from ECMWF analysis - wind)

Plans

- Use 2km COSMO forecast wind in a (one-way) nested WAM over the entire Aegean Sea
- Use high resolution COSMO wind with SWAN model to produce detail coastal forecasts
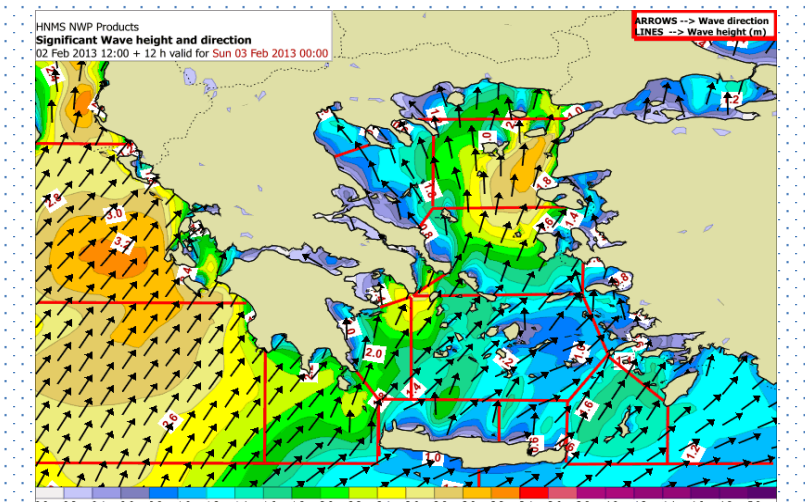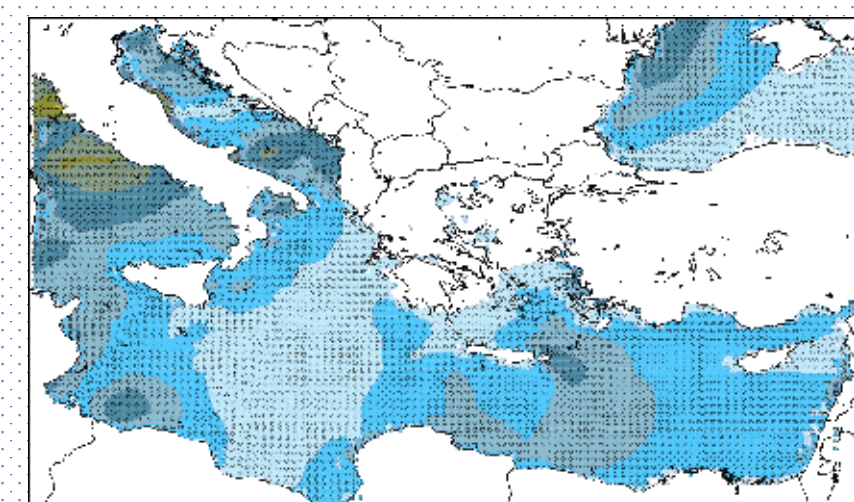
- Sea route forecasts of wind and sea state for support of Maritime Authorities
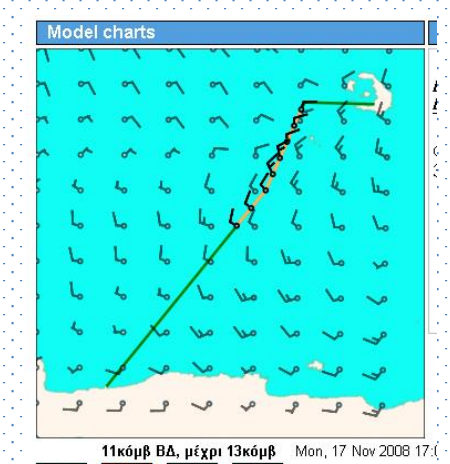
- COSMO forecasted wind is used as input for the oil spillage and object-drift model MOTHY

COSMO extended applications

Current status
- COSMO-CLM Installation and configuration at ECMWF
- COSMO-ART source code compilations at ECMWF

Plans
- Gain enough experience to perform trial runs of CLM.
- Reach operational use status for COSMO-ART (currently being setup in cooperation with NOA)