MAMA

Kick-off meeting, Paris 11-13 March 2002

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Workpackage-4: MAMA-Model:

Objectives:

Assess the needs for modelling capabilities for local forecasting systems.

Capacitate in state of the art for numerical modelling

- ***Task 4.1***: *Definition of coastal/shelf modelling areas*
- ***Task 4.2***: *Compilation of historical regional climatologies*
- ***Task 4.3***: *New model implementations*
- ***Task 4.4***: *Model results assessment*
- ***Task 4.5***: *Expert meeting on forecasting system design*

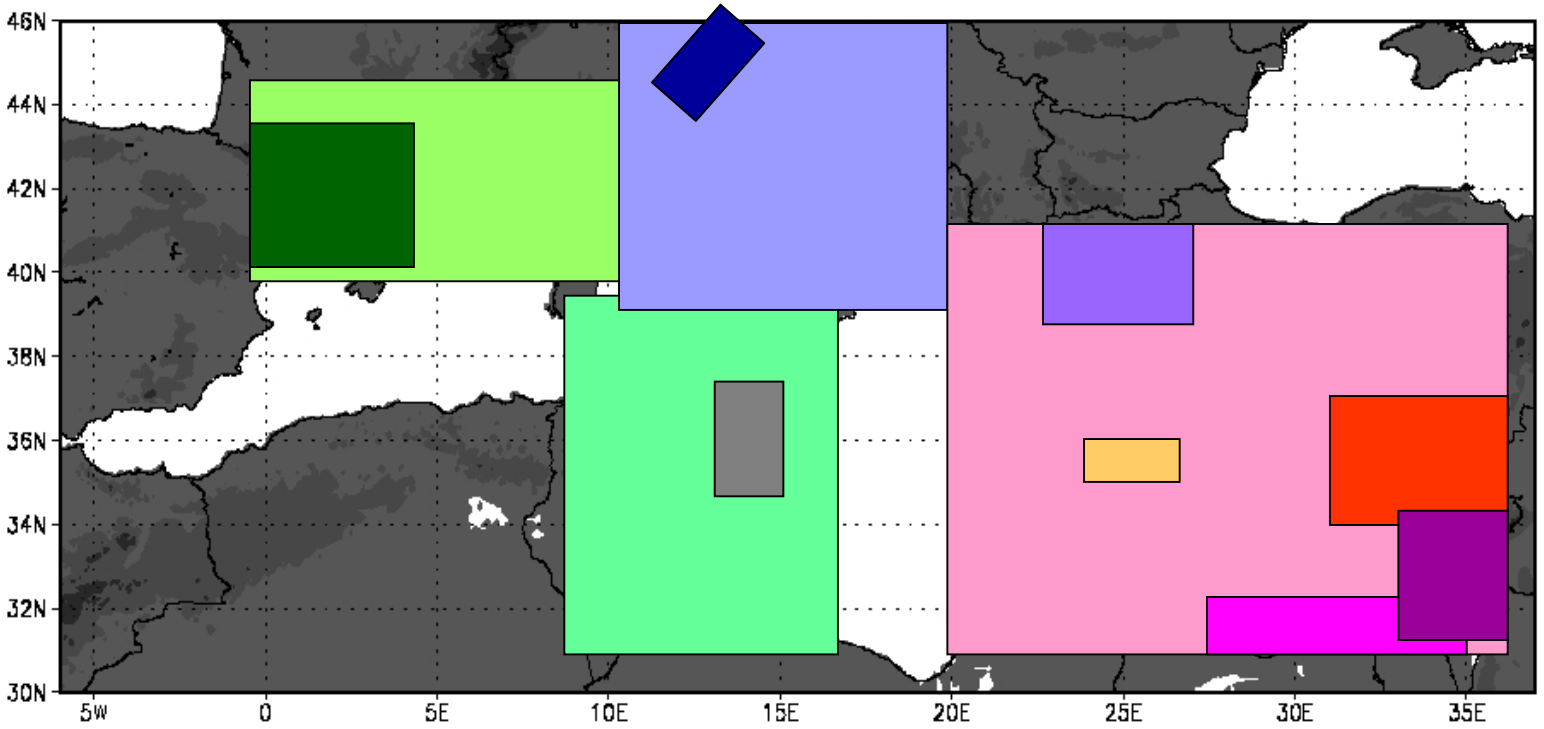
Task 4.1: Definition of coastal/shelf modelling areas

Produce documentation on existing modelling systems (MFSPP and others).

Identification of the shelf/coastal areas candidate for new model implementations.

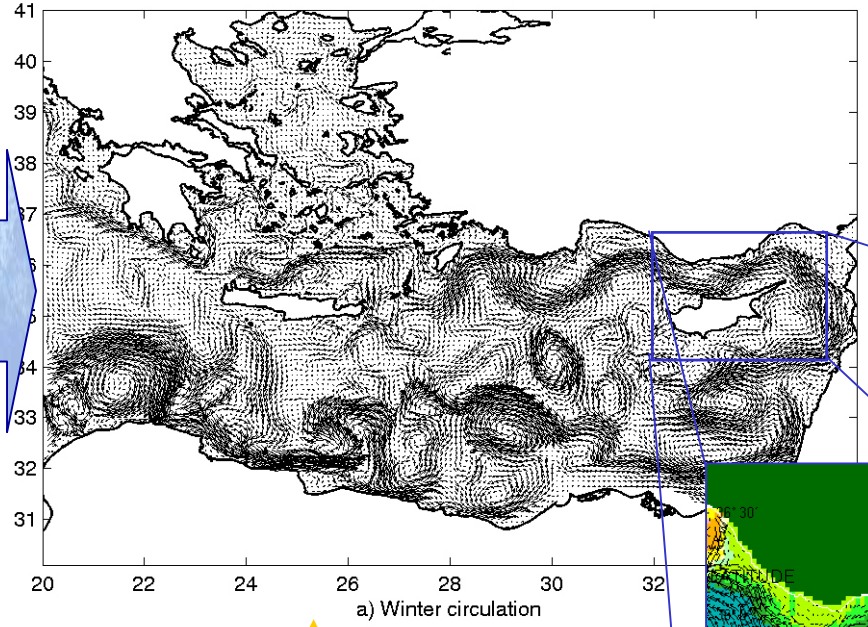
The MFSPP nested modelling approach

A hyerarchy of nested numerical models covering The Mediterranean Sea from the basin to the Regional/Shelf scale



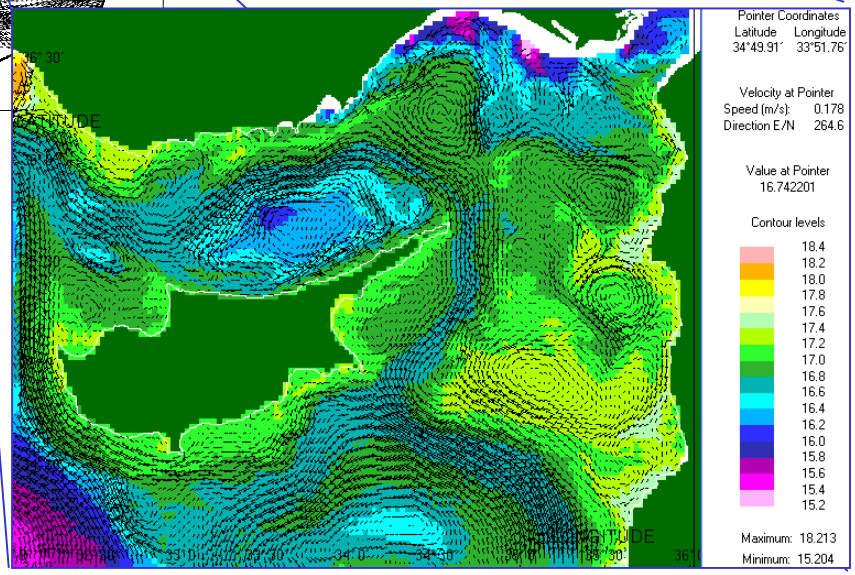
OGCM - Regional Levantine- Shelf Cyprus

OGCM



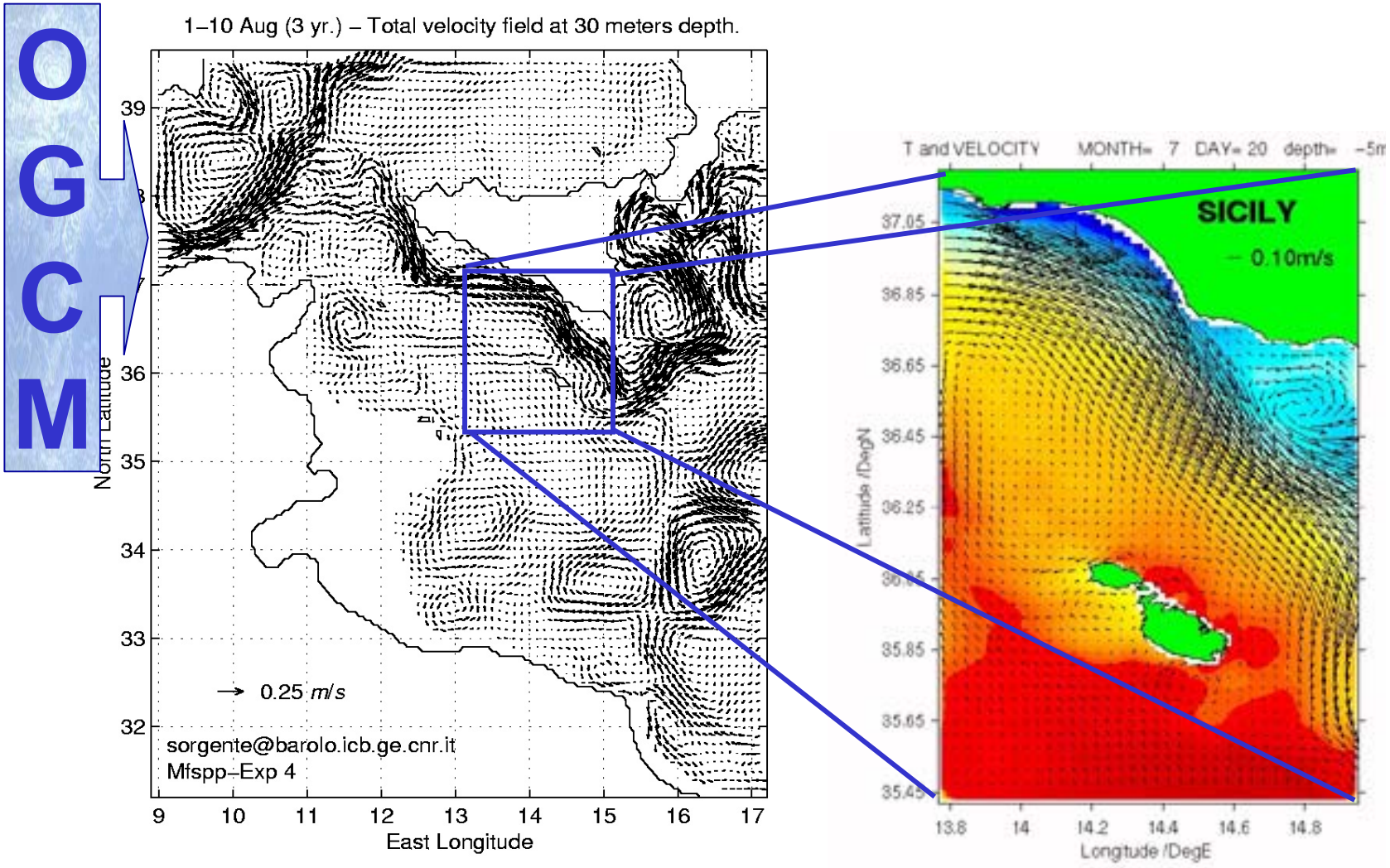
Levantine

CLIMATOLOGICAL RUN



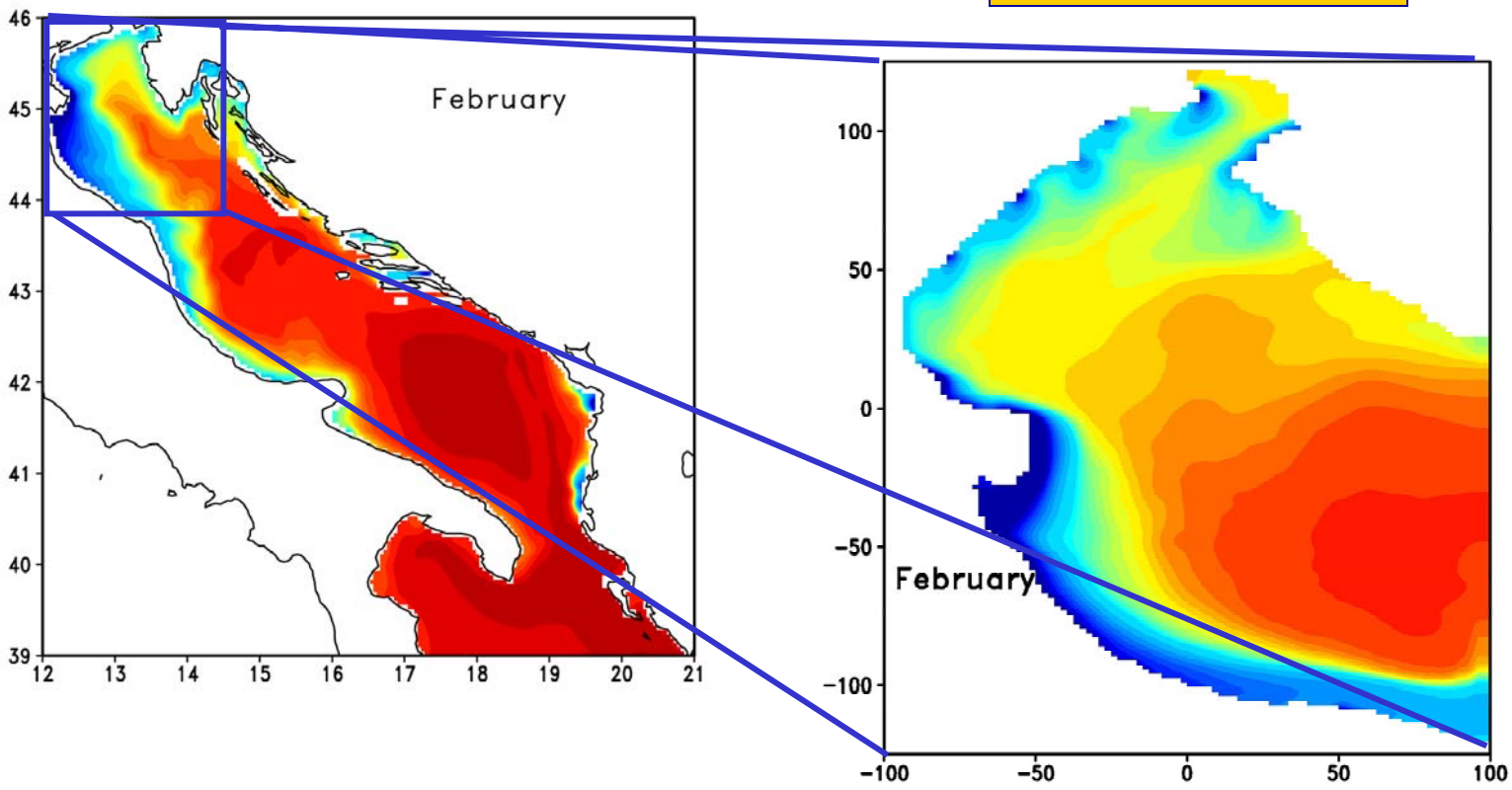
Cyprus shelf

OGCM- Sicilian regional-Malta shelf



5 km regional model

1.5 km shelf model



OGCM- regional Adriatic - Northern Adriatic shelf

MFSPP developed considerable (and usable) experience in one way off-line nesting technique

A report on the development and the implementation of the MFSPP nesting technique is available on the web:

www.ambra.unibo.it/rasponi/sincem/mfsppwp6/nesting.html

Action: Go download it !!!!

Identification of regions for new coastal/shelf model implementations.

Desirable prerequisites for a candidate region are:

- ***Known phenomenology (based of existent scientific literature)***

- ***Climatological data availability (task 4.2) for model validation***

Action
(for FSR, INSTM, LEM, NCMS):

Brief report on:

Circulation phenomenology
of the coastal/shelf areas candidate
for the modelling exercises.

Availability of hydrological data.

To be put on the MAMA-web site……
….ASAP

Task 4.2 Compilation of historical climatologies

Compilation of interdisciplinary multivariate data sets for the relevant coastal/shelf areas

Starting point: The MEDATLAS data set (to be possibly enriched) for local areas.

Use: Validation of physical and biogeochemical models

Delivery:
(final product): month 32
preliminary product: month 12

Task 4.3: New model implementations

General characteristics:

Based on the Princeton Ocean Model, POM (as the MFSPP model family)

Horizontal resolution: between 1.5 and 5 km

Vertical resolution: to be established

Initial conditions and open boundary nesting data from the 1/8° MFSPP-OGCM

Surface Forcing
(wind stress, heat and water flux): climatological

Princeton Ocean Model (POM)

Web site:
www.aos.princeton.edu/WWWPUBLIC/htdocspom

Lot of useful information

It is possible to register as new user and enter the POM mailing list.

Data availability

MFSPP-OGCM climatological model results:
Available from the MFSPP-WP5 web site (www.cineca.it/mfspp/wp5/frames.html)

Climatological surface forcing from ECMWF reanalysis
Available from MFSPP-WP6 web site (www.oc.phys.uoa.gr/mfspp)

Mediterranean Bathymetry U.S. Navy unclassified 1/60° database
Available from MFSPP-WP6 web site (www.oc.phys.uoa.gr/mfspp)

Data availability (2)

MED-6 monthly Mediterranean Sea gridded (1°) temperature and salinity fields (from MEDATLAS)

Available from the MFSPP-WP5 web site (www.cineca.it/mfspp/wp5/frames.html)

Action: Download !!!

Actions:

Month 4

UNIBO and IMC/CNR-S2AM:

Disseminate via web their MFSPP POM implementation with accessory codes (initialisation file preparation, surface forcing and open boundary data interpolation, etc.)

FSR, INSTM, LEM, NCMS:

Will start preparing the implementation

Month 7

Start visit of scientists from FSR, INSTM, LEM, NCMS to finalize the implementation

1D Ecosystem Model

MEM1D (Ionian Sea Implementation):
Based on the coupling of the 1D POM with the Regional Seas Ecosystem Model (ERSEM)

Downloadable (with documentation) at:

www.met.ed.ac.uk/mednet/mem1d.html

Task 4.4: Model Assessment

Focus on correct simulation of the seasonal cycle in the regions of interest

By the end of the project (possibly earlier): report on model skill….and……

….scientific papers

TASK 4.5 Expert meeting

By the End of the Project:
Expert meeting on the "optimal" design of a Forecasting System (observing and modelling) for the Mediterranean Sea based on the state of the art arising from research Projects such as:
MAMA, MFSPP, MFSTEP……and other upcoming Projects.