

MFSTEP
Mediterranean Forecasting System – Toward Environmental Predictions

WP-11:
Nesting ecosystem models from the basin to the shelf scale

WP-12:
Data assimilation for biochemical observations

TECHNICAL MEETING
Bologna University, Physics Department
June 10-11 2003

REPORT OF THE MAIN MEETING CONCLUSIONS

WorkPackage 11

Biogeochemical Fluxes Model (BFM) Development:

The BFM to be developed and released will be the FORTRAN 90 translation of the C (OpenSesame) ERSEM III Model.

The BFM will make use of the NetCDF files for input and output.

The BFM will be released with a set of default (and documented parameter). Parameter calibration is left to individual users.

With respect to the ERSEM III model, the BFM will have the following additional features:

-Benthic module: Both The NIOZ and the Oldenburg modules for benthic nutrient dynamics will be included in the BFM along with the benthic return module.

-Chlorophyll-a will be included as an explicit state variable utilising the implementation developed by Marcello Vichi.

-Dissolved Organic Matter dynamics (DOM) will include refractory dissolved organic carbon as an explicit state variable.

-The computation of the Bacterial Growth Efficiency (BGE) will follow the formulation of Rivkin and Legendre (2001).

ACTION

The BFM development will start with a Model development meeting to be held at NIOZ (Texel, NL) October 7-9 2003.

MOM – BFM Coupling

It turned out that at the present stage there is no need to utilise the OASIS coupler to develop the MOM-BFM coupling.

OPA tracer code will be used (previous data interpolation from the “C” to the “B” grid).

The MOM-BFM coupling will be developed in an off-line mode. To achieve this, 1day MOM averaged fields of Temperature, Salinity, Velocity and convective adjustment will have to be released.

WorkPackage 12

The Seek filter will be released as early as possible.

The data assimilation experiments will be done using older coupled model versions (given the preliminary nature of this work there is no need to wait for the BFM release).