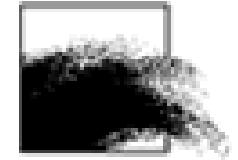


RECOLOUR project



MUMM - RBINS

REconstruction of COLOUR scenes: project summary, North Sea results illustration, perspectives.

BELSPO meeting, Namur February 2007

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Motivation

Satellite ocean data are gappy in space and time due to :

- clouds**
- masking of low confidence data**
- absence of acquisition**

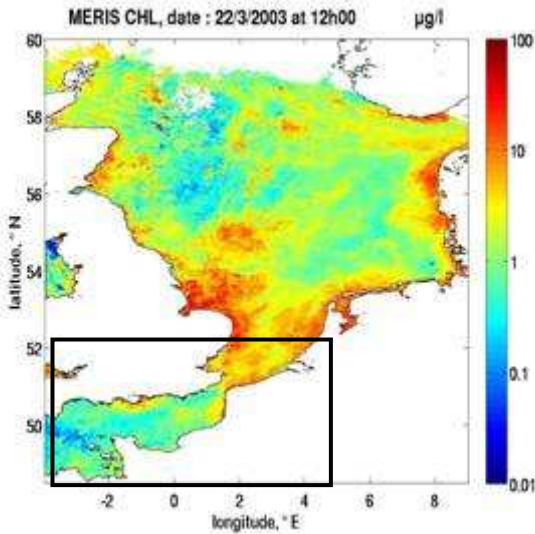
The marine environment is highly dynamic => complete time series of full gridded data are requested for numerous studies

Objectives

EOF-based analysis of historical satellite data in order to :

- 1) identify dominant spatio-temporal dynamics and correlations**
- 2) fill missing data and produce full and regular gridded data**
- 3) identify suspect/extreme data**
- 4) forecast from present data**

Geographic study areas and satellite imagery used



North Sea: Belcolour Database:

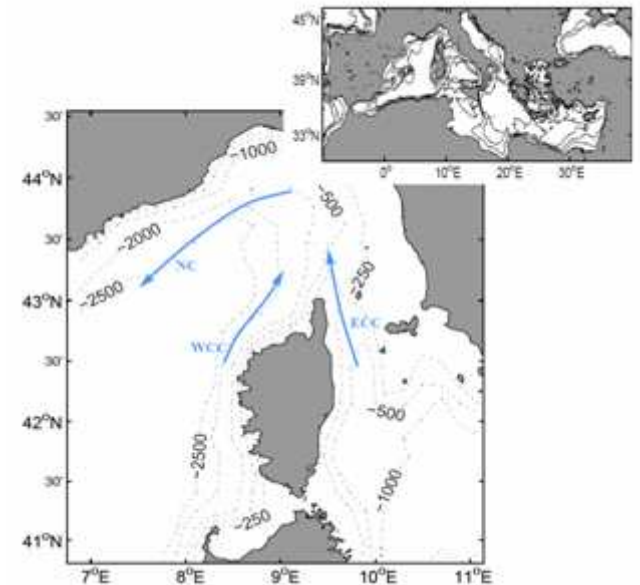
area: 48.5°N-52.5°N 4°W-5°E;
frequency: daily

sensor	period	parameters
MODIS-AQUA	2002-2006	Chl.a, SST, TSM, Flag
SeaWiFS	1997-2004	Chl.a, TSM, Flag
MERIS	2002-2006	Chl.a, TSM, Flag

Mediterranean Sea, area around Corsica:

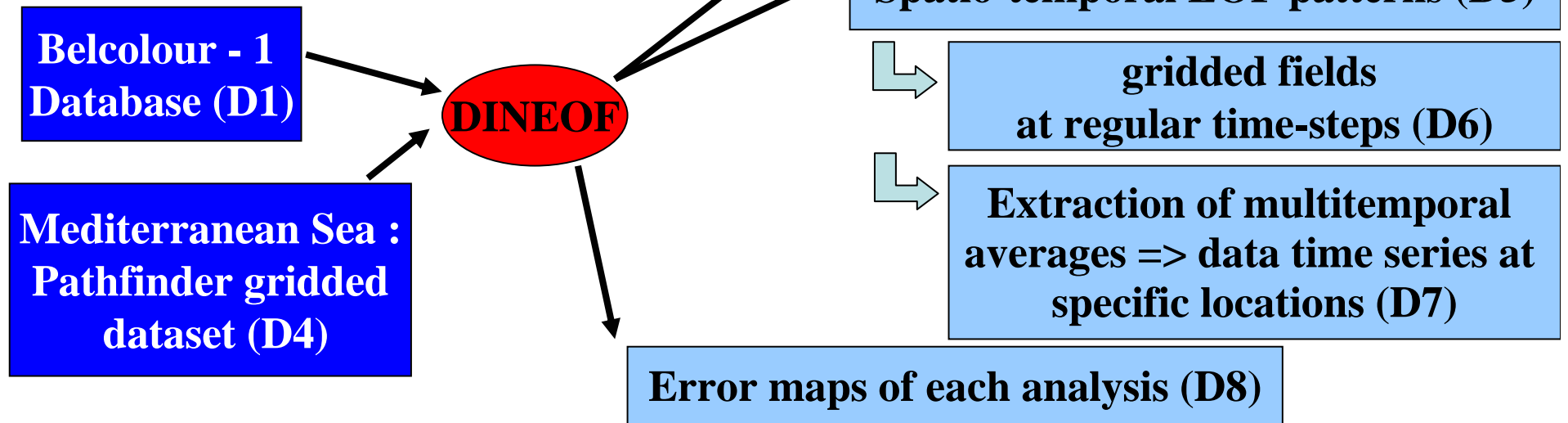
area: 40.5°N-44.5°N and 6.5°E-11.5°E;
frequency: daily

sensor	period	parameter
AVHRR	1995-2004	SST archive version 5



RECOLOUR products scheme

Univariate analysis:



Multivariate analysis:

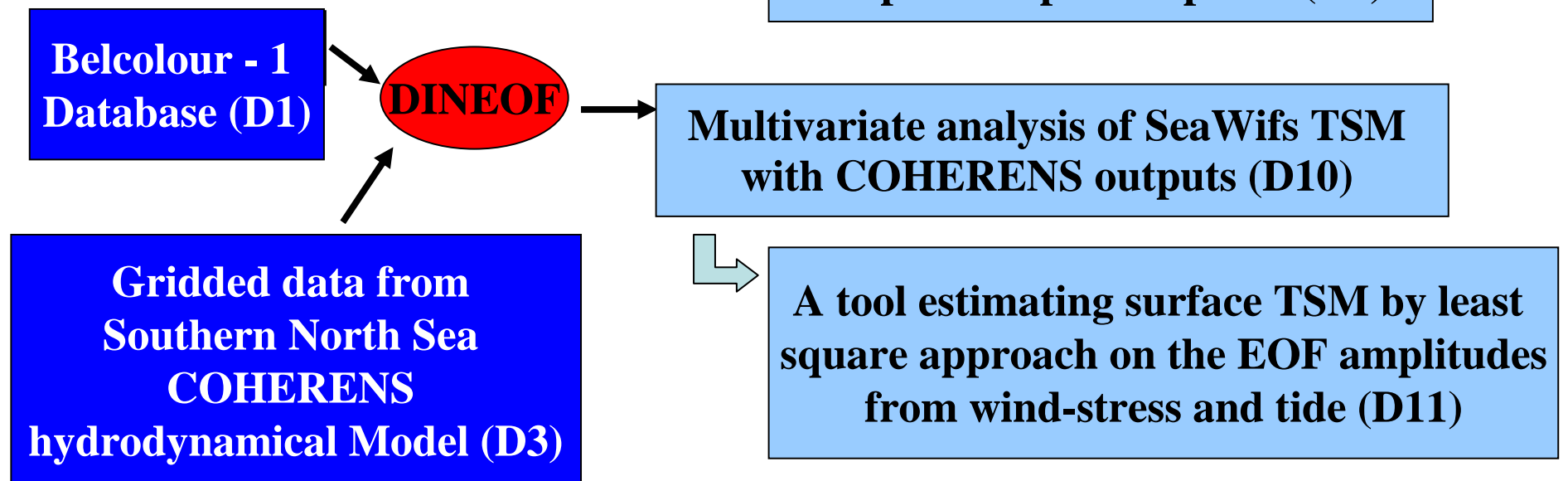
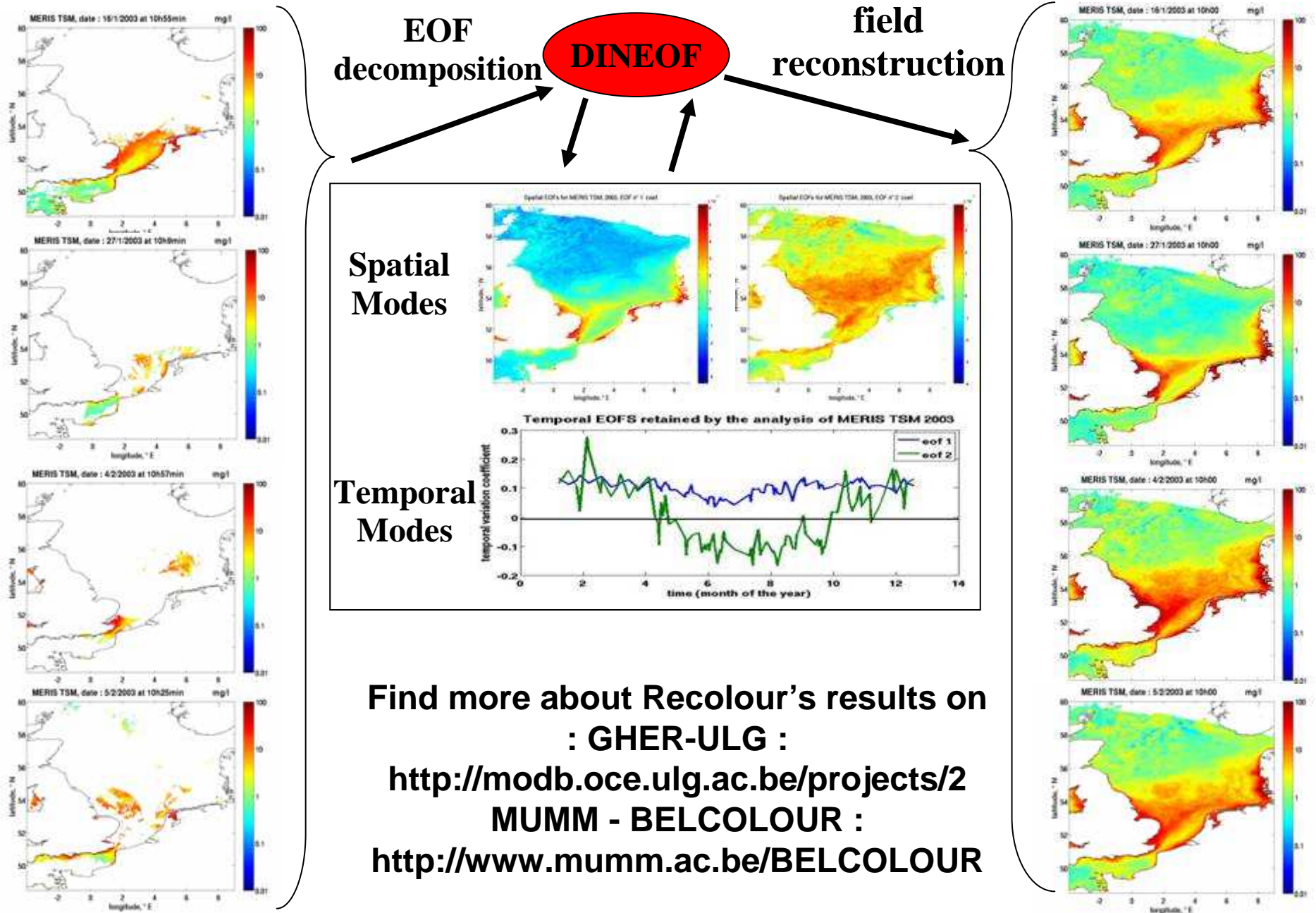


Illustration with MERIS TSM 2003 data on the North Sea



Conclusions

- **Dominant patterns of MERIS 2003 TSM and CHL well captured in 4 modes**
- **Interest of sub regional studies : patterns coherency depends on scale**
- **Different influence of large river discharge shown by 2nd mode of TSM data**
- **Questionable images are pointed out by unusual shift of temporal eofs**

Perspectives

- **Realise tests to determine to which extent DINEOF distinguishes noise and outliers from small scale natural processes (original satellite data, interpolated field and in situ data).**
- **Results of DINEOF treatments should be compared with results obtained with other methods: i.e. DIVA method (Data Interpolating Variational Analysis), and methods from other research teams.**
- **Attempts to combine various approaches to reduce filtering of correct information**