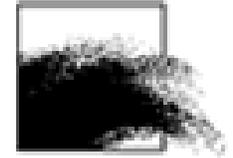


## RECOLOUR project



MUMM - RBINS

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

*BELSPO meeting, Namur February 2007*

Damien Sirjacobs <sup>1</sup>, Aïda Azcarate <sup>1</sup>, Alexander Barth <sup>1</sup>, YoungJe Park <sup>2</sup>,  
Bouchra Nechad <sup>2</sup>, Kevin Ruddick <sup>2</sup> and Jean-Marie Beckers <sup>1</sup>

<sup>1</sup> GHER , **ULG**

Liège, Belgium

<sup>2</sup> **MUMM**,

Bruxelles, Belgium

## **Motivation**

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

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

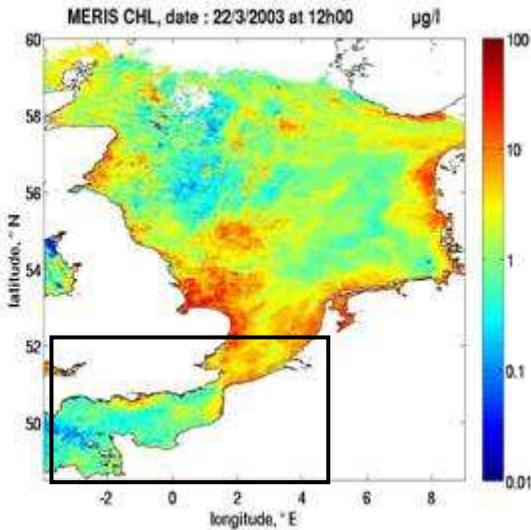
**The marine environment is highly dynamic => complete time series of full gridded data are requested for numerous studies**

## **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:

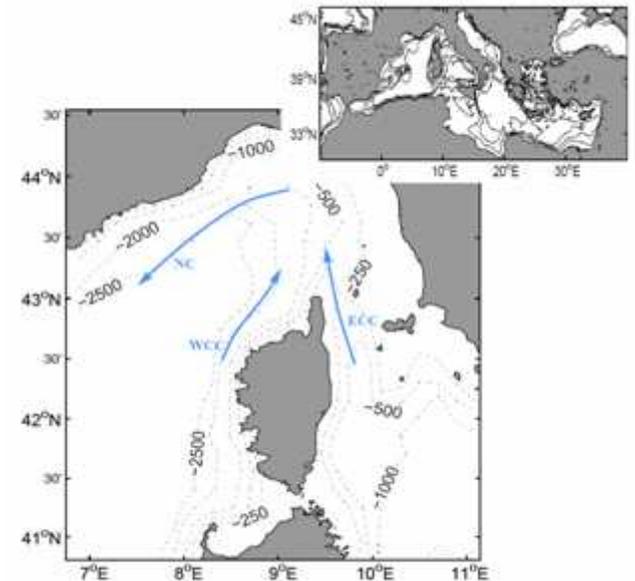
area: 48.5°N-52.5°N 4°W-5°E;  
frequency: daily

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:

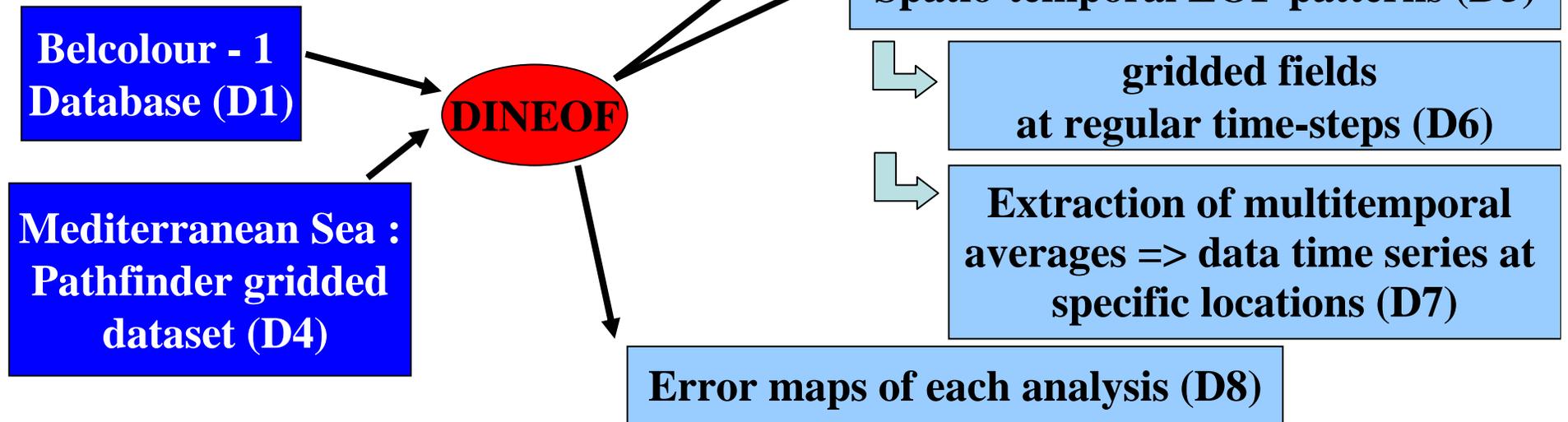
area: 40.5°N-44.5°N and 6.5°E-11.5°E;  
frequency: daily

sensor	period	parameter
AVHRR	1995-2004	SST archive version 5

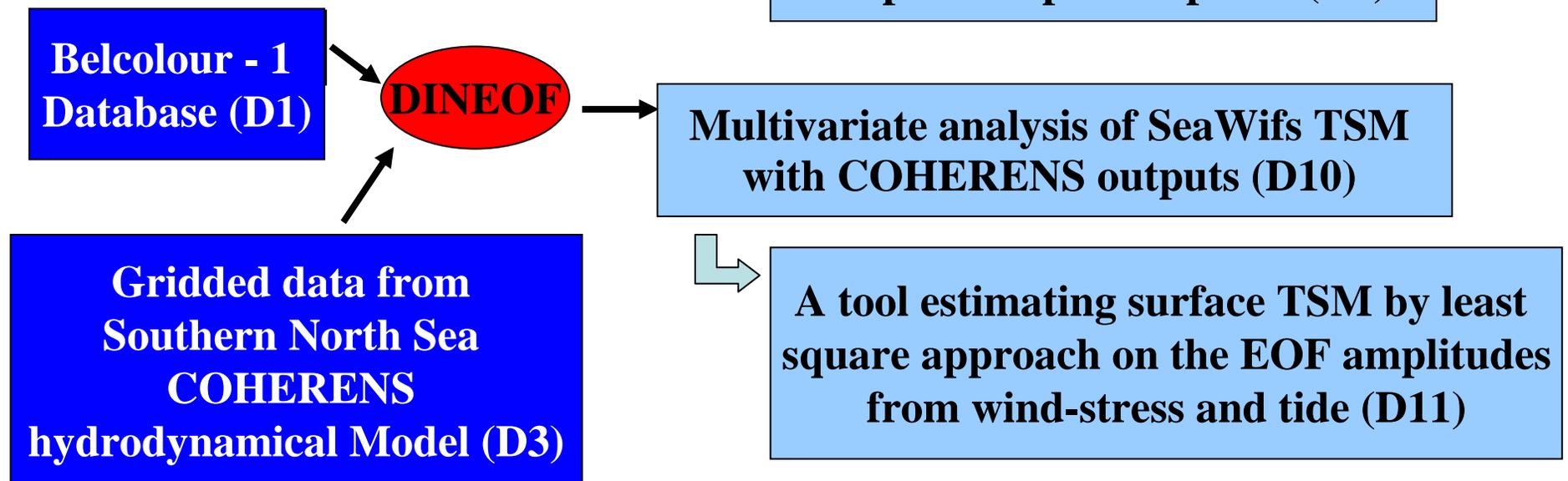


# RECOLOUR products scheme

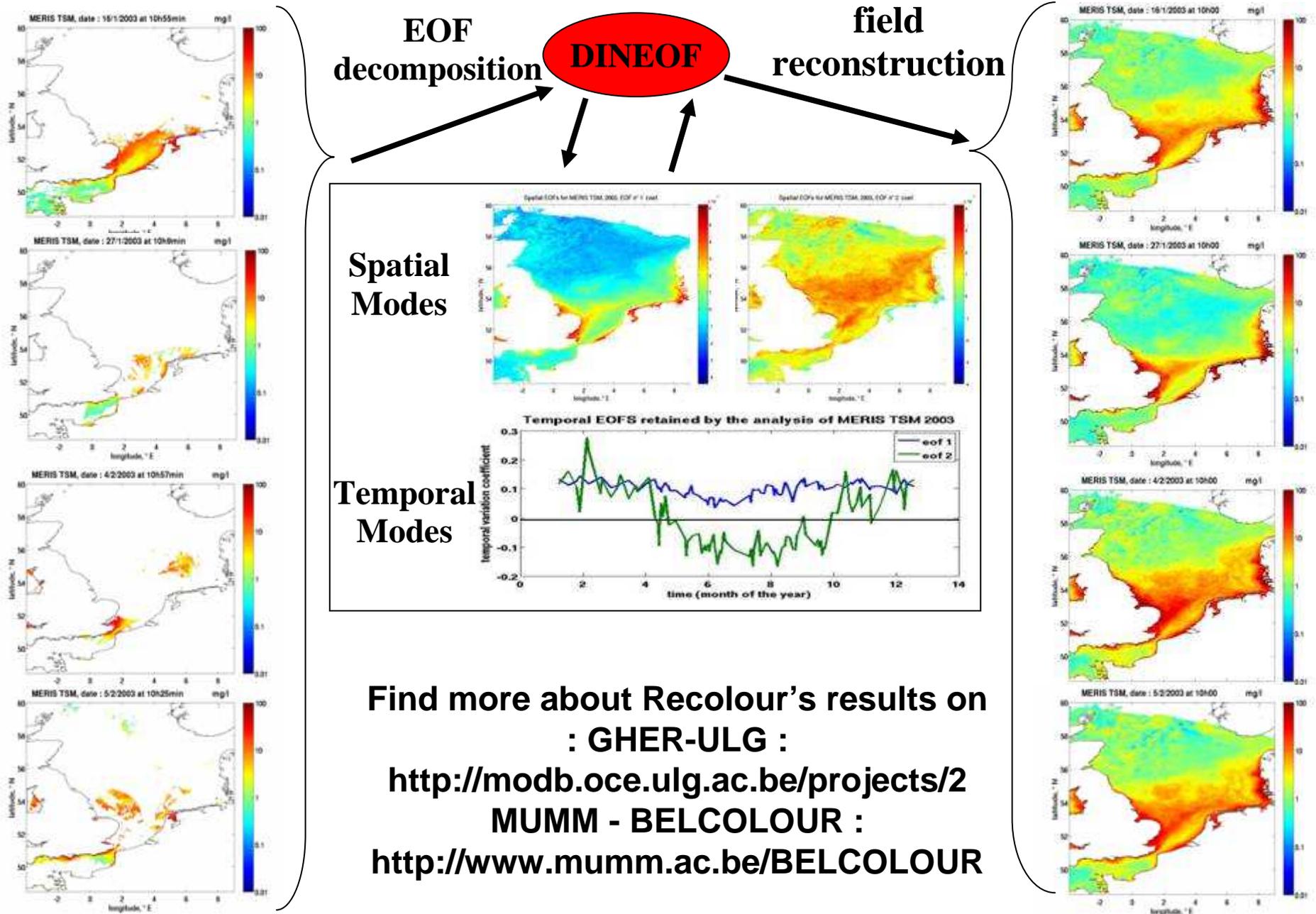
## Univariate analysis:



## 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 2<sup>nd</sup> 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**