

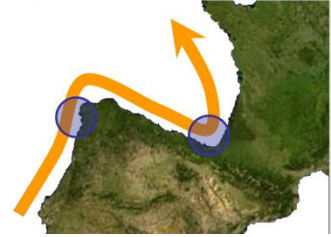


MyOcean V1 Coordinated validation in IBI

IBI-ROOS Meeting February 2012, Pasaia



PROPOSAL FOR THE THIRD CALL OF TERRITORIAL COOPERATION PROGRAMME SOUTHWESTERN EUROPE SUDOE 2007-2013



2 years project: 2013-2014; Call March 2nd 2012

- **AZTI-Tecnalia**
- **CG64 (Conseil général des Pyrénées Atlantiques)**
with associated partner Rivages Pro Tech, Lyonnaise
des Eaux
- **French partner-RadarHF**
- **MeteoGalicia**
- **INTECMAR**
- **IH**



Specific objectives



- **Coordinate “intermediate users” activities in SUDOE for “downstream services” and feedback to the “Core Service” of MyOcean. Process oriented validation.**
- **Develop and optimize coastal observing systems, in particular transnational HF radars networking.**
- **To capitalize on transnational coastal operational oceanography systems LOREA and RAIA:**
 - **coordinating the continuity of consortium alliances (administrations, stakeholders, research institutes, private companies, users associations, etc) in transnational areas RAIA and LOREA**
 - **maintaining LOREA and RAIA data platform and connecting to IBI/MyOcean platform**
 - **including research input for validation.**



About feedback to Core service

To organize the validation of MyOcean V1 in a coordinated way in SUDOE area with *Intermediate Users* perspectives

Based on:

- Available Observing Systems
- The main known processes along the IBI *shelf/slope*
- An integrated point of view (instead of studying the processes locally)



Process- oriented validation

Answer state-of-the-art questions from an integrated point of view:

- ✓ Spatial and temporal variability of shelf/slope surface currents and wind-current interactions (scientific and operational interests)
- ✓ Contribution of the IPC to the surface transport, spatial and temporal variability
- ✓ Contribution of processes as tides and vertical motions and other (local forcings/processes) to the shelf/slope circulation

Main Processes:

Wind induced current

Slope current

Tides, internal waves, upwelling

Other (local) processes

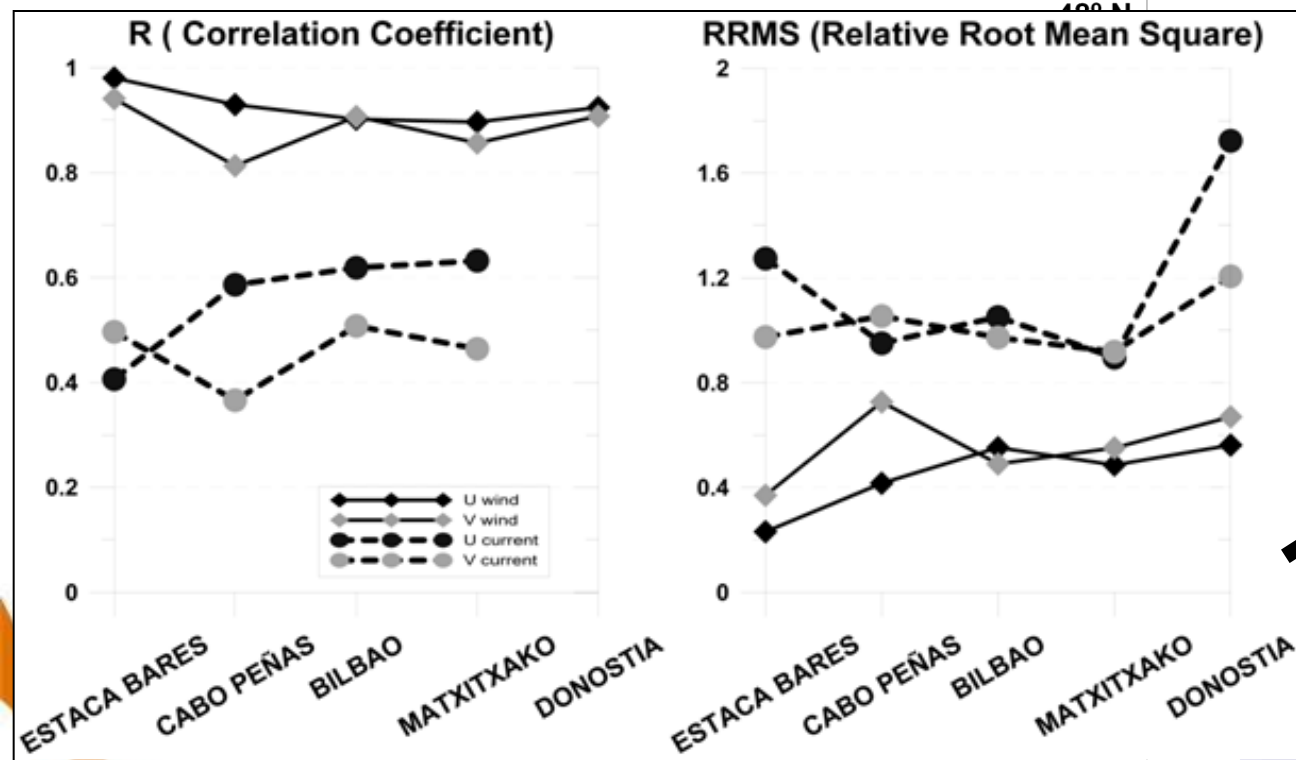
River plumes dynamics, ...



Surface currents and wind-current interactions

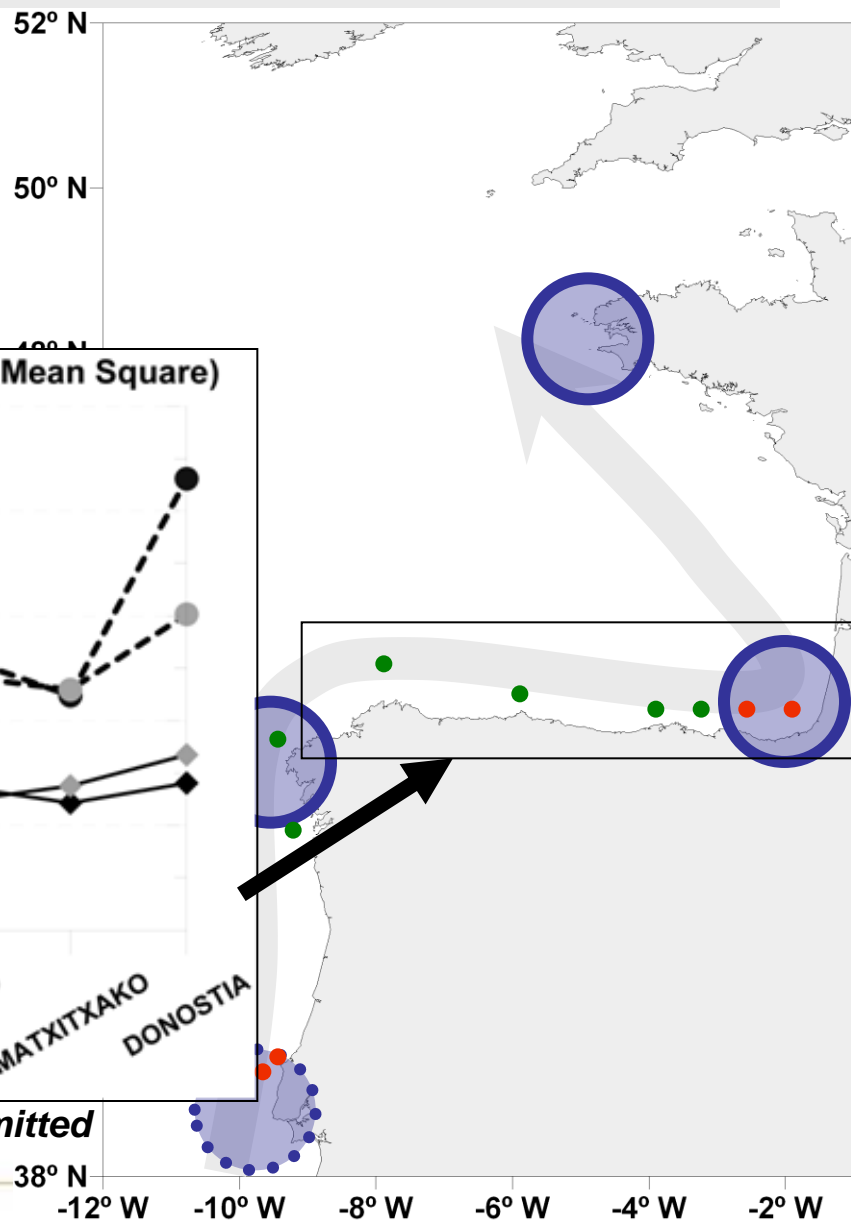
Main questions:

➤ Winds and surface currents



Alzorritz et al. 2011 submitted

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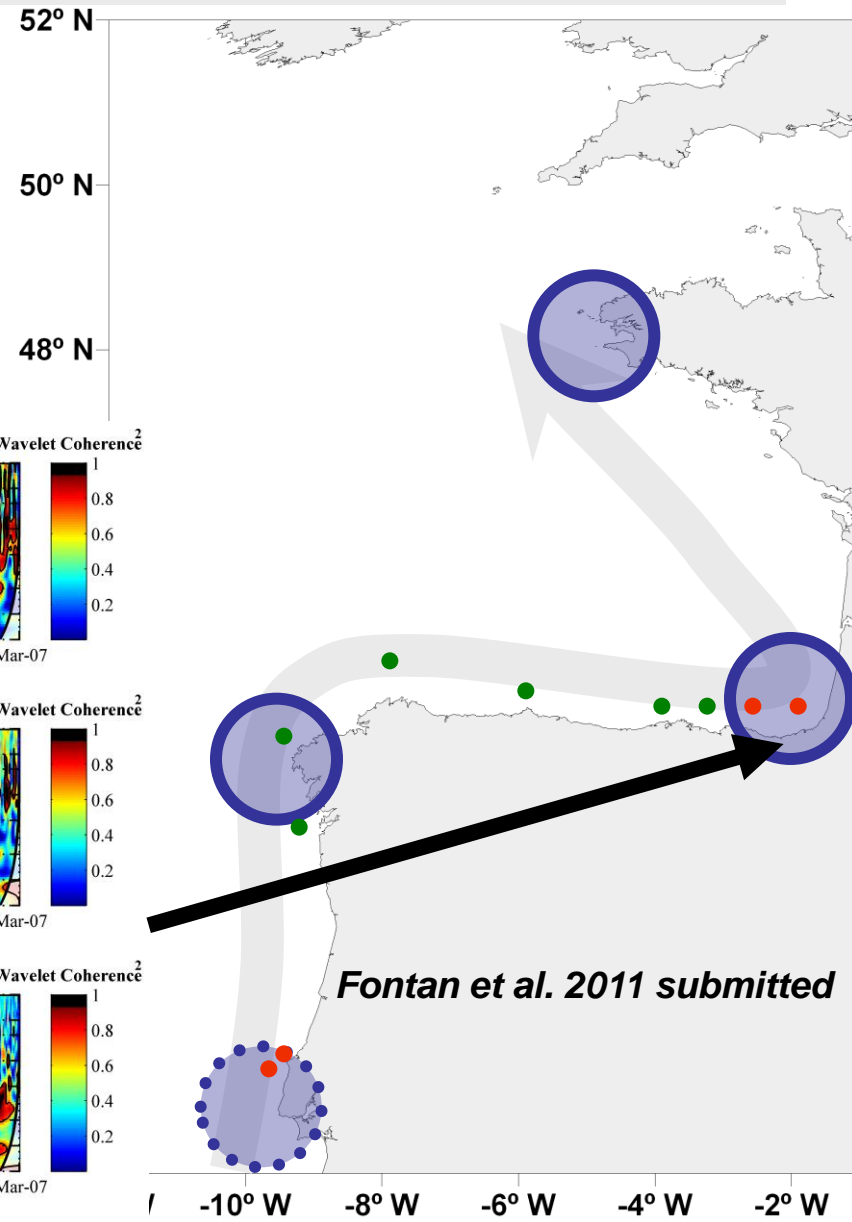
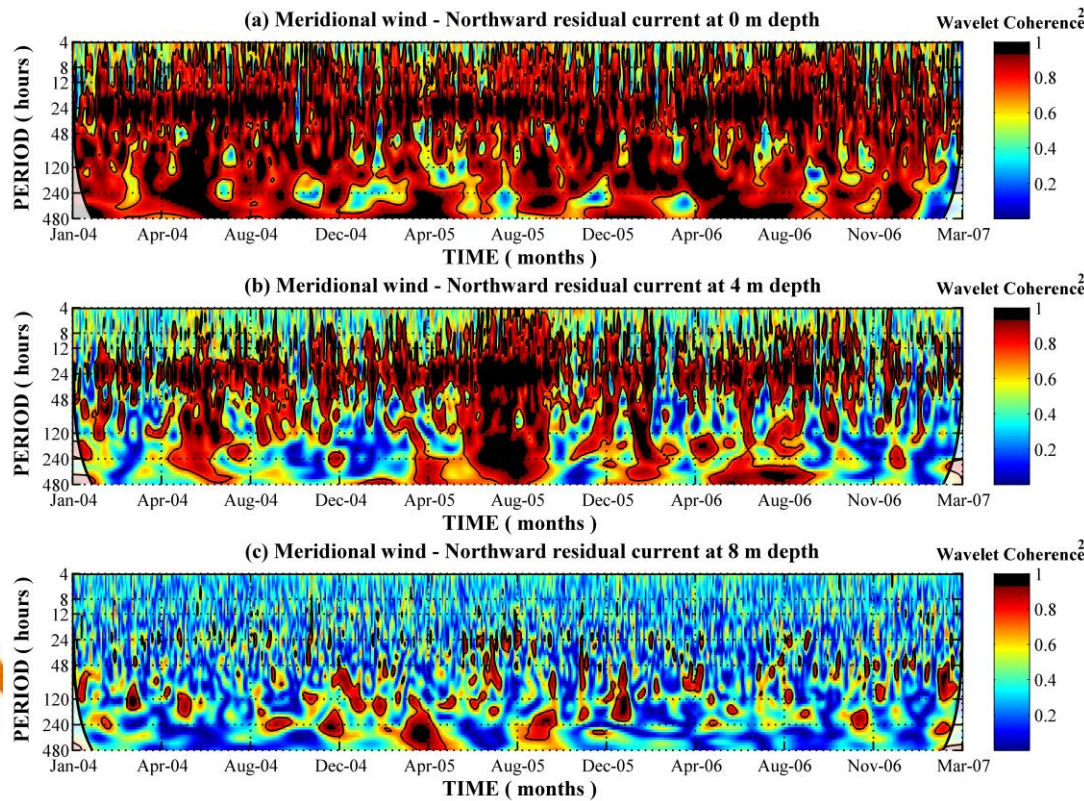




Surface currents and wind-current interactions

Main questions:

- Winds and surface currents
- **Wind-current interactions at different scales (and depths)**





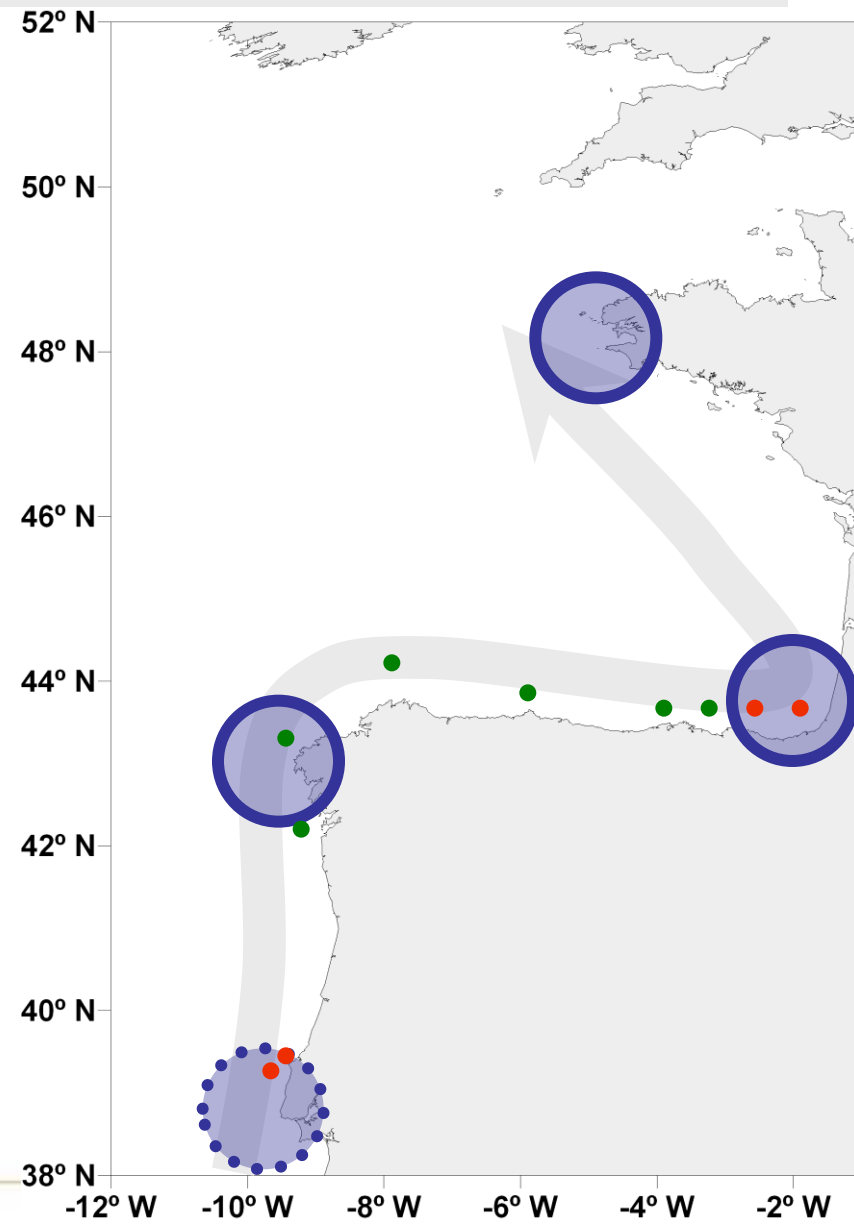
Surface currents and wind-current interactions

Main questions:

- Winds and surface currents
- Wind-current interactions at different scales (and depths)

What is the spatial variability of these processes along the SUDOE coast?

Does the IBI model reproduce them properly? At a local scale? At a regional scale?



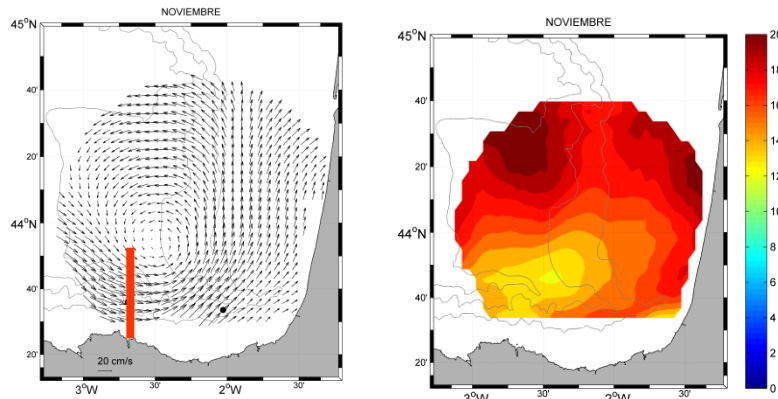


Slope current and surface transport

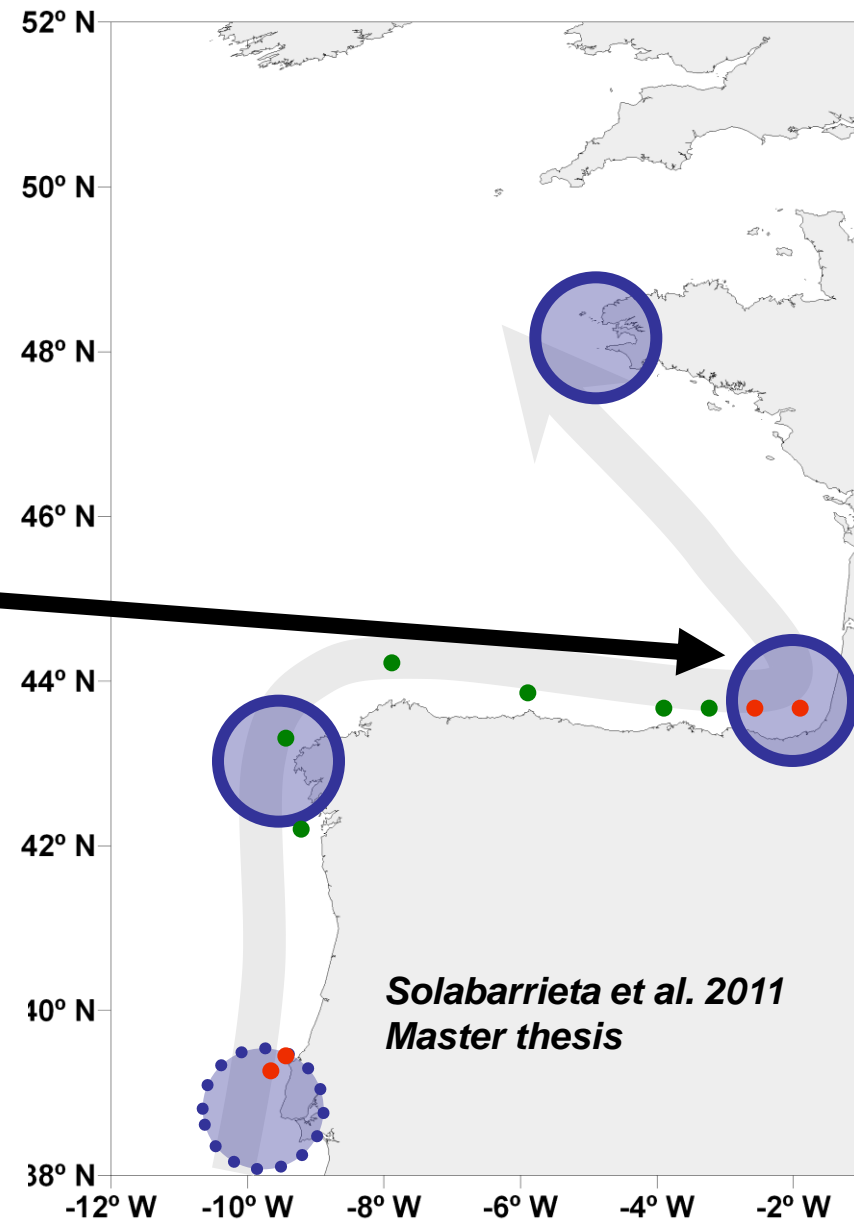
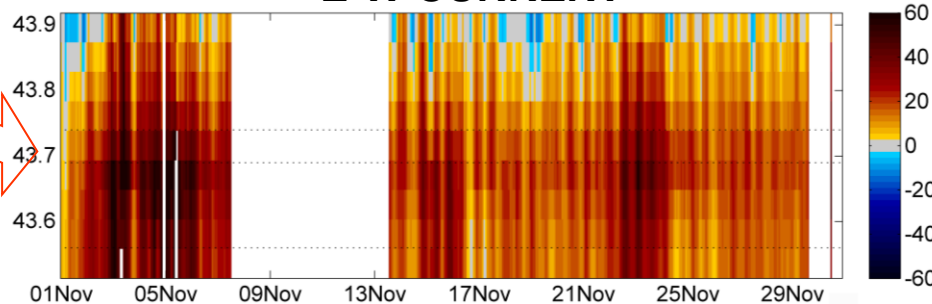
Main questions:

- Stratification conditions, vertical mixing
- **Surface signal of the slope current (time and space variability)**

NOVEMBER 2009 MEAN SURFACE FIELD



E-W CURRENT



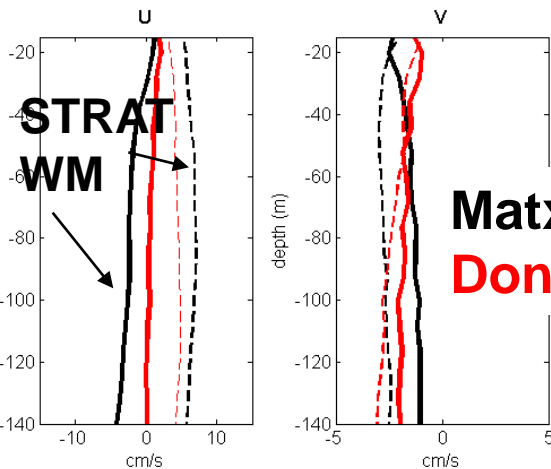


Slope current and surface transport

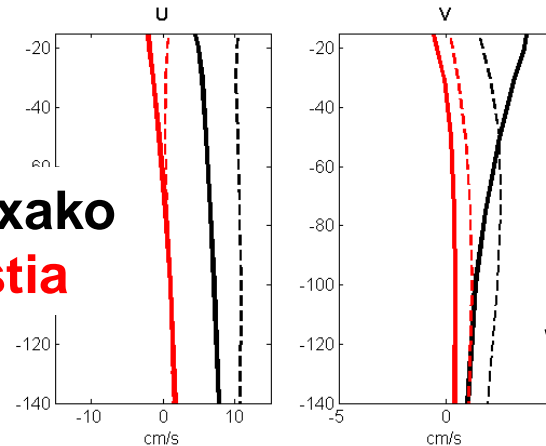
Main questions:

- Stratification conditions, vertical mixing
- Surface signal of the slope current (time and space variability)
- **Vertical structure of the slope current**

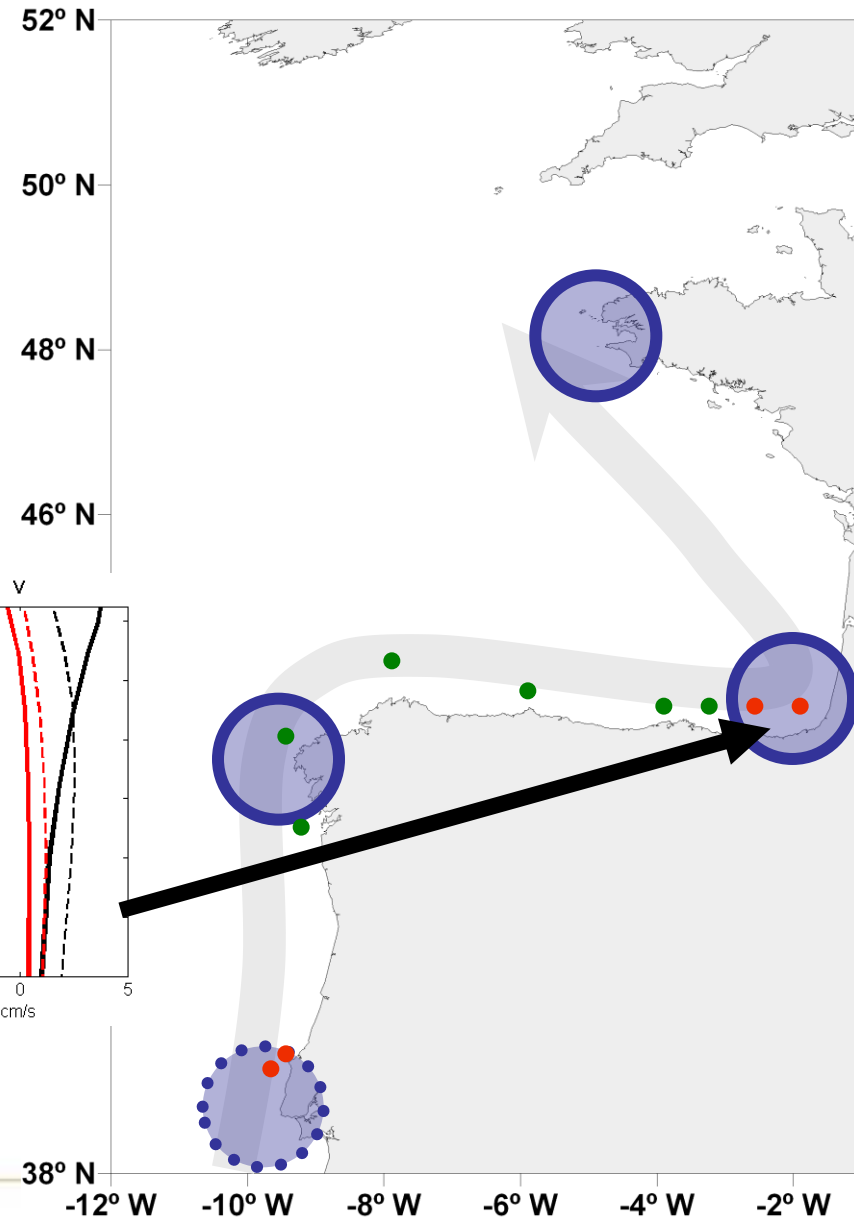
OBSERVATIONS



MODEL



Rubio et al. 2010

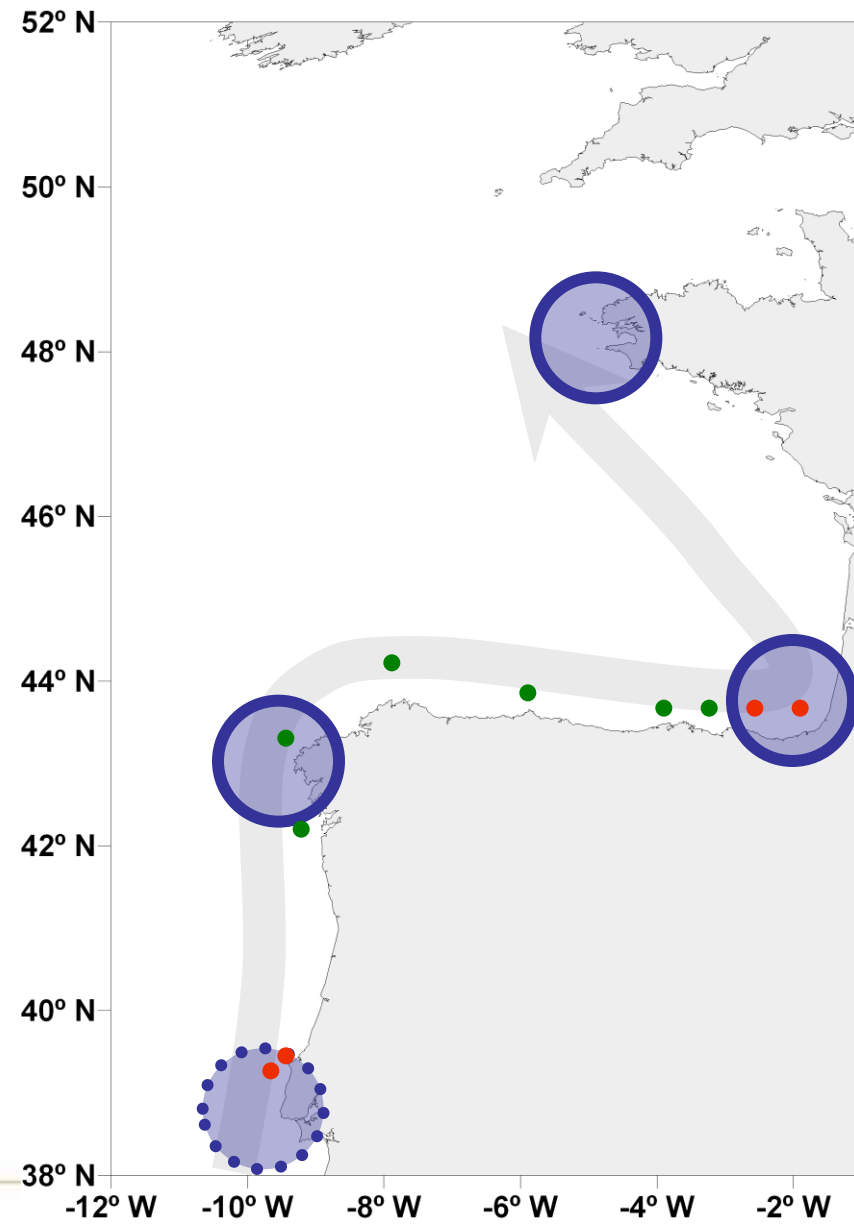




Slope current and surface transport

Main questions:

- Stratification conditions, vertical mixing
- Surface signal of the slope current (time and space variability)
- Vertical structure of the slope current
- **What is the spatial variability of these processes along the SUDOE coast?**
- **Does the IBI model reproduce them properly? At a local scale? At a regional scale?**





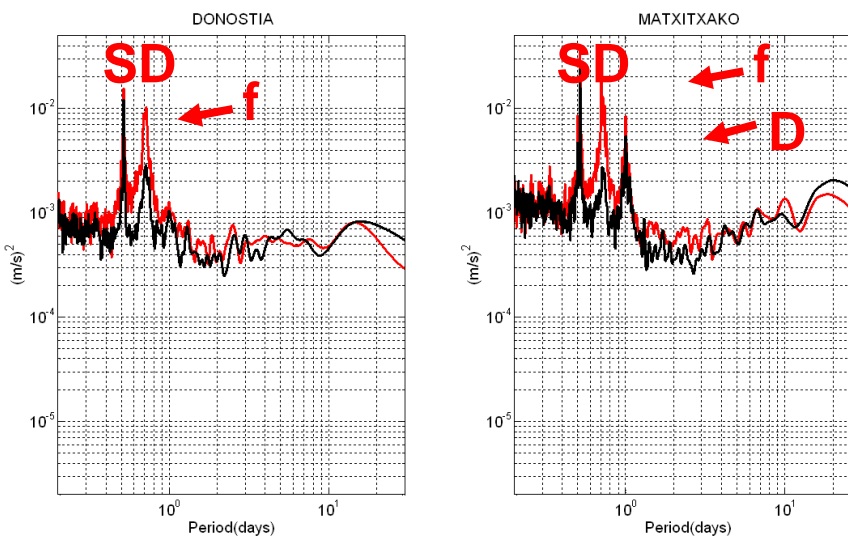
Contribution of other processes to the surface circulation

Main questions:

➤ Tides, inertial waves

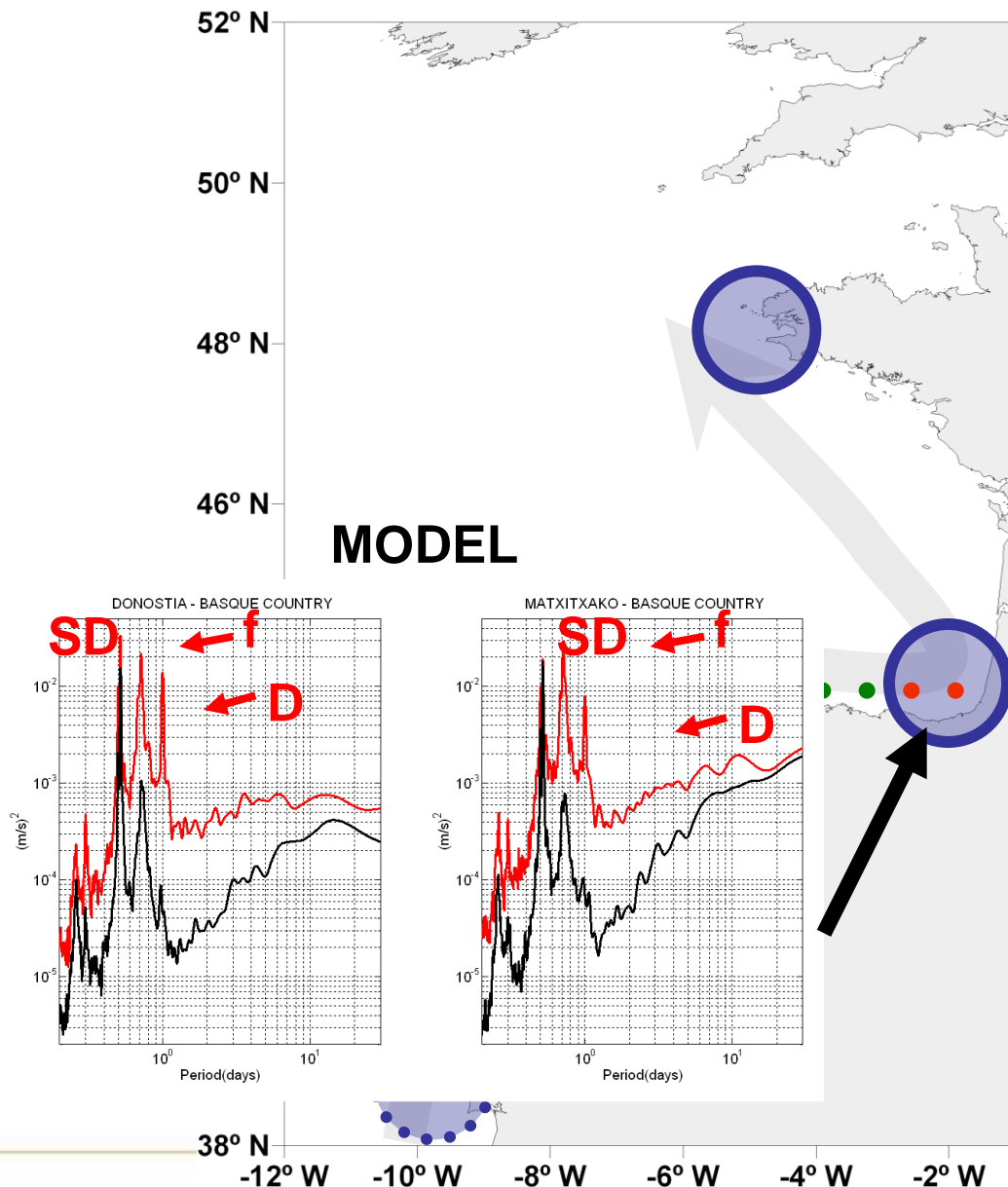
— 10-40 m
— 100-140 m

OBSERVATIONS



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MODEL

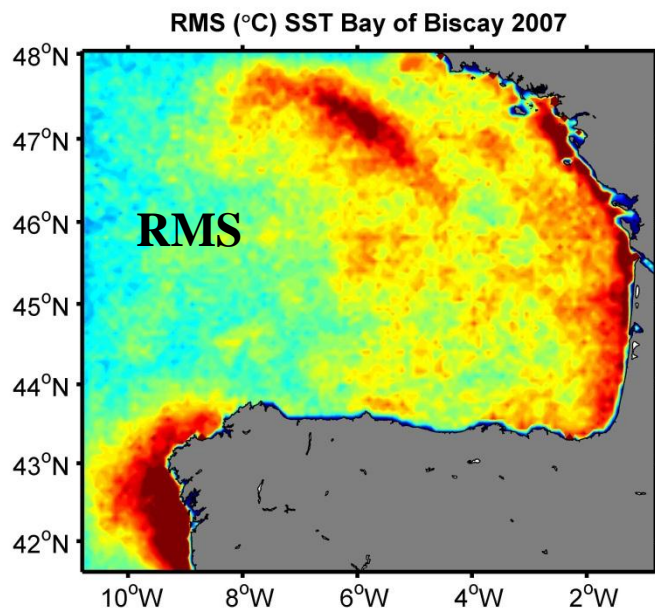




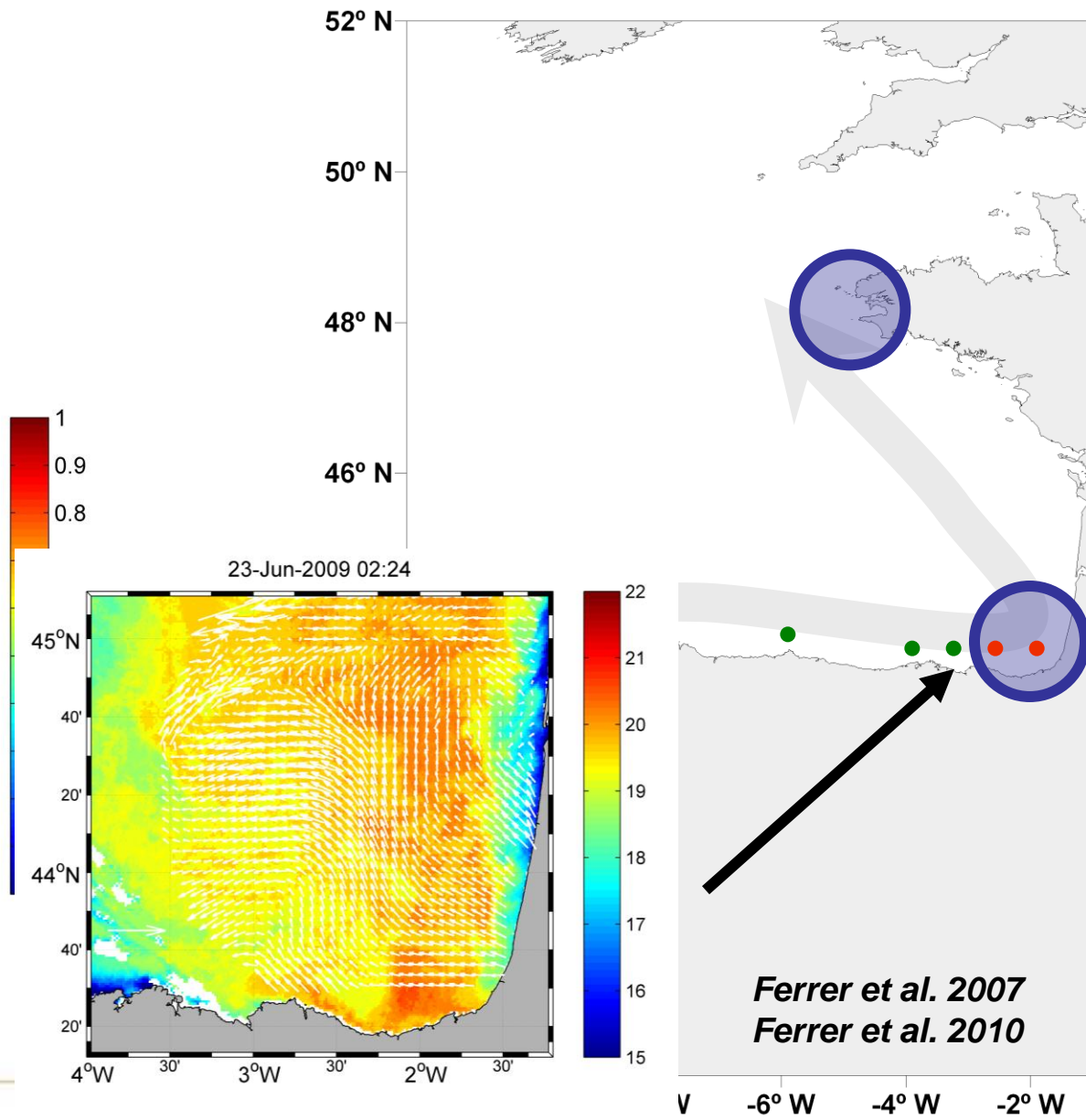
Contribution of other processes to the surface circulation

Main questions:

- Tides, inertial waves
- Upwelling processes
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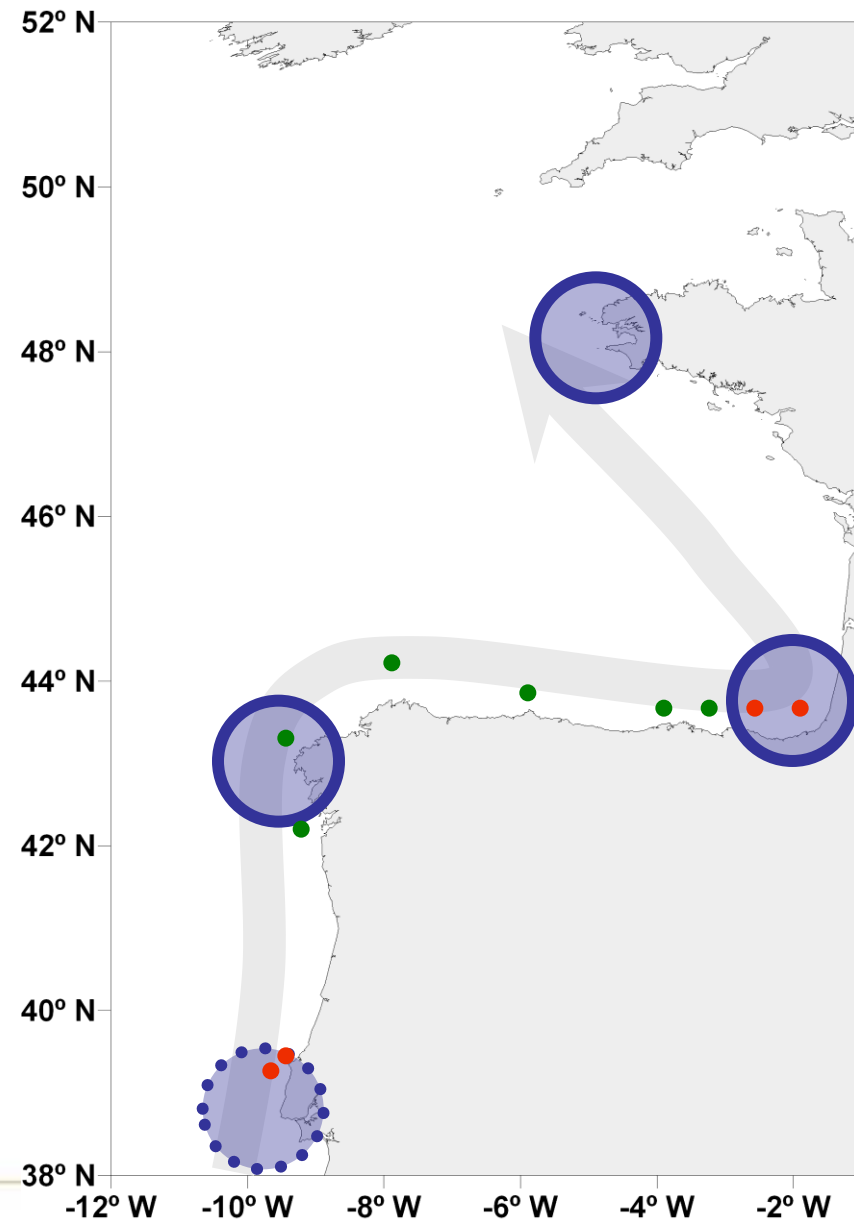




Contribution of other processes to the surface circulation

Main questions:

- Tides, inertial waves
 - Upwelling processes
 -
-
- What is the spatial variability of these processes along the IBI coast?
 - Does the IBI model reproduce them properly? At a local scale? At a regional scale?





Summary

Main ideas

- Process oriented validation
- IBI area integrated approach

Potential benefits

- Scientific <-> Operational
- Feedback for observing systems developments

Next steps

- SUDOE framework
- Other opportunities

