Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE
MINISTÈRE DE LA DÉFENSE

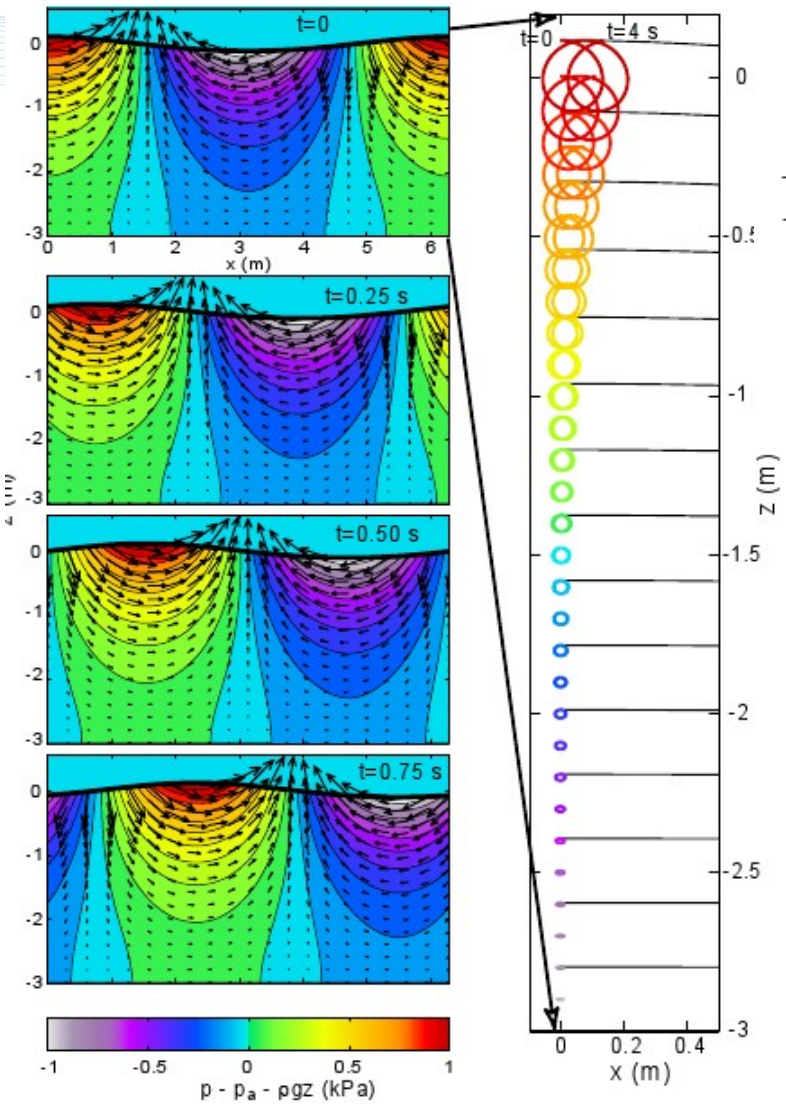
SHOM
L'océan à la carte

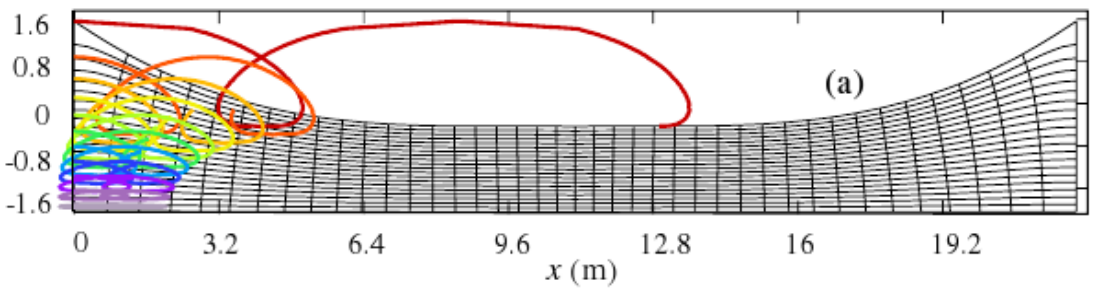
Etats de mer
.... et circulation pré-littorale: théorie, modélisation, campagnes

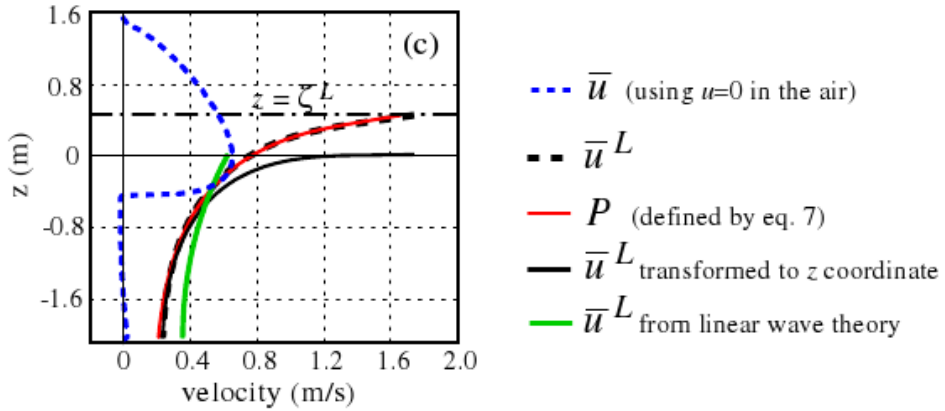
Fabrice Ardhuin

Pour mémoire: les "débouchés" de l'océano ops. vus par MERSEA:
- dérive en surface
- réfraction des vagues sur courants
- HAB (efflorescences algales)

Les vagues: phénoménologie

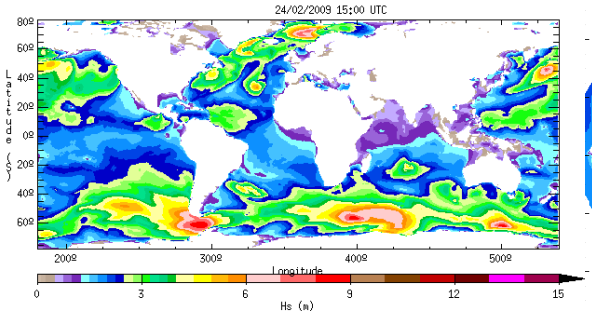


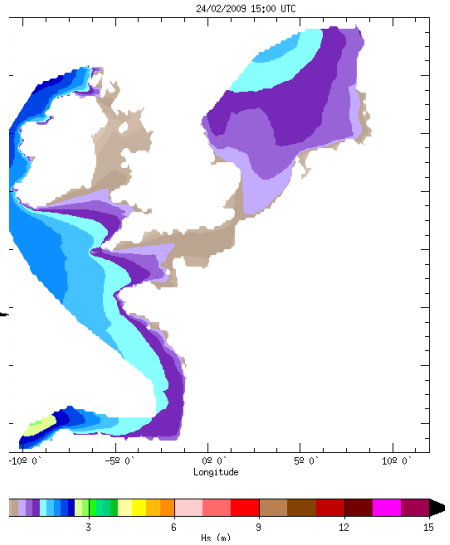


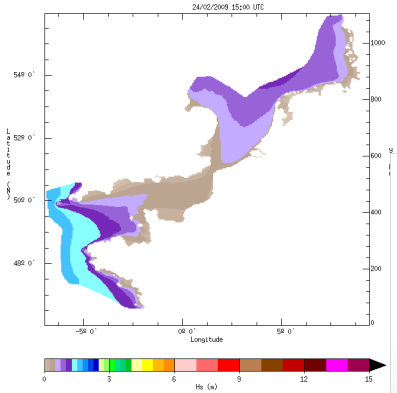


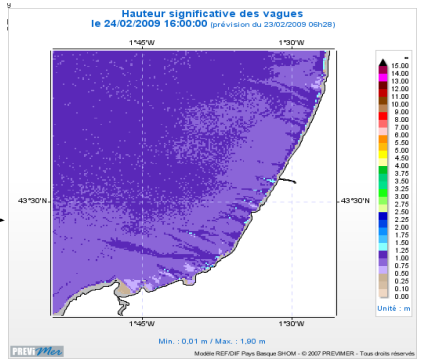
Les vagues: modélisation et applications existantes, exemple du système Prévimer

-
- 2 runs par jour (resultats à 1 PM et 1 AM UTC)

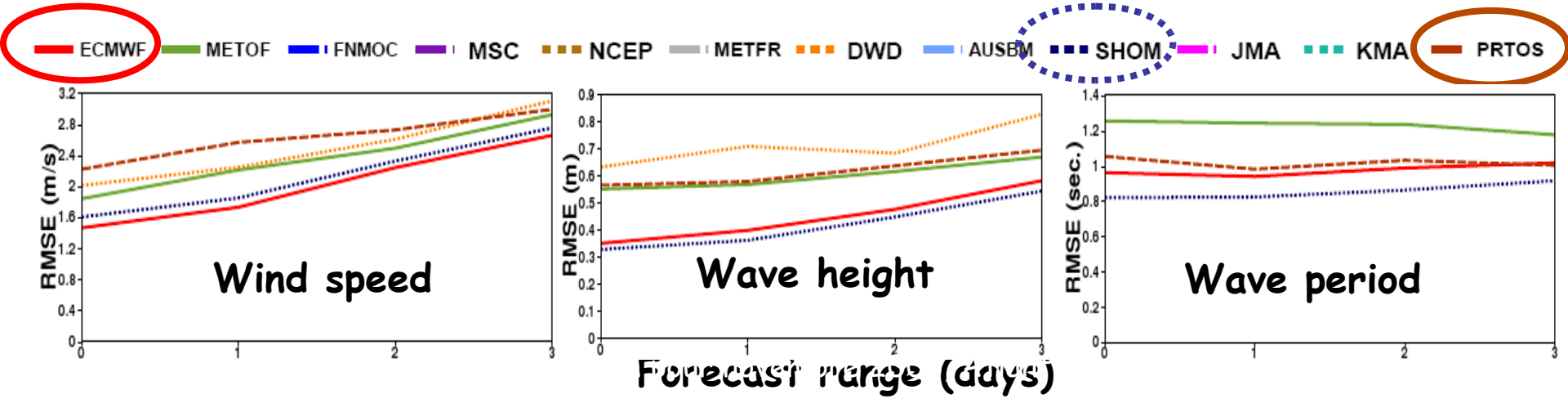




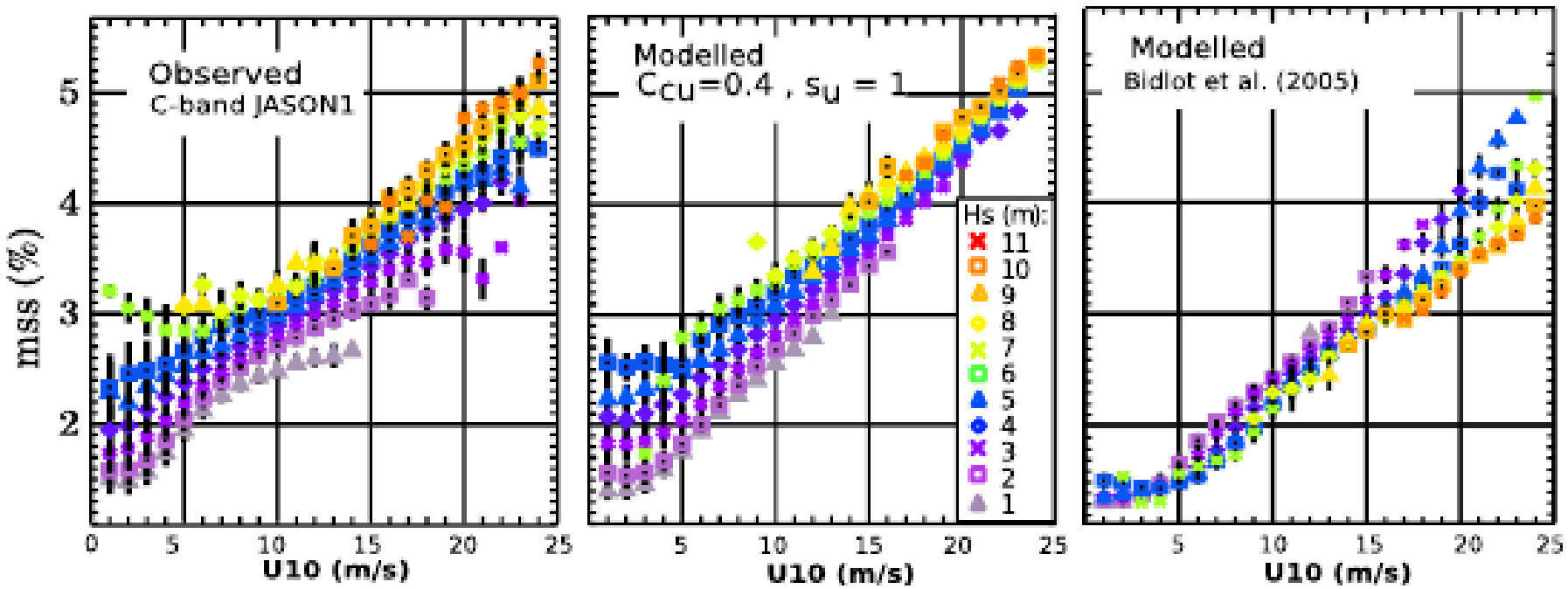




Validation de l'existant sur les paramètres "sécurité de la navigation"



Validation de l'existant sur des paramètres plus "exotiques"



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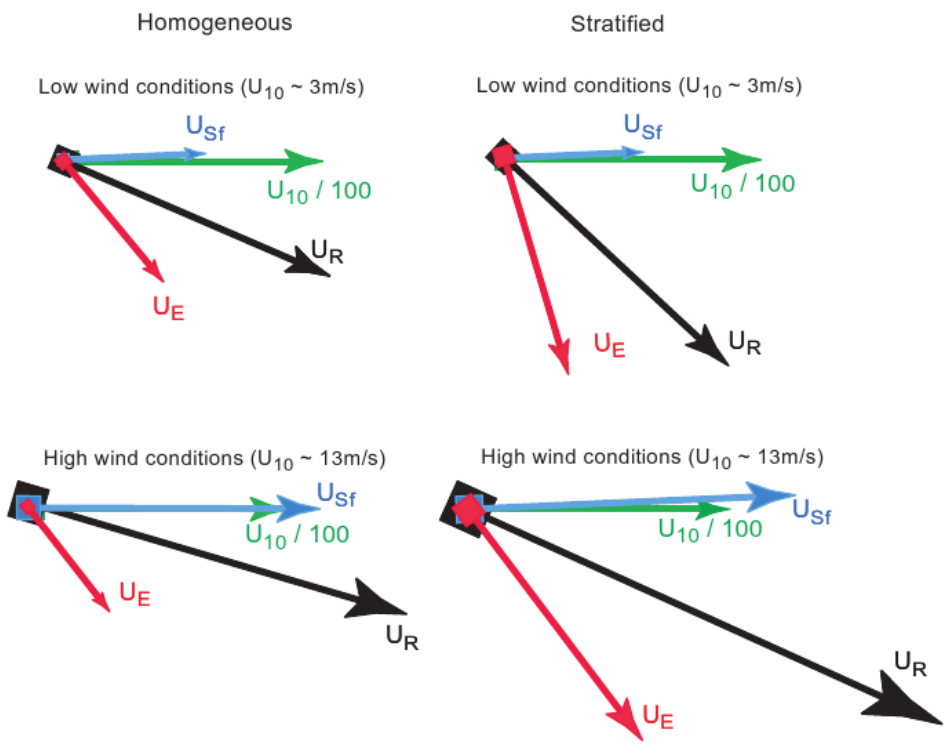
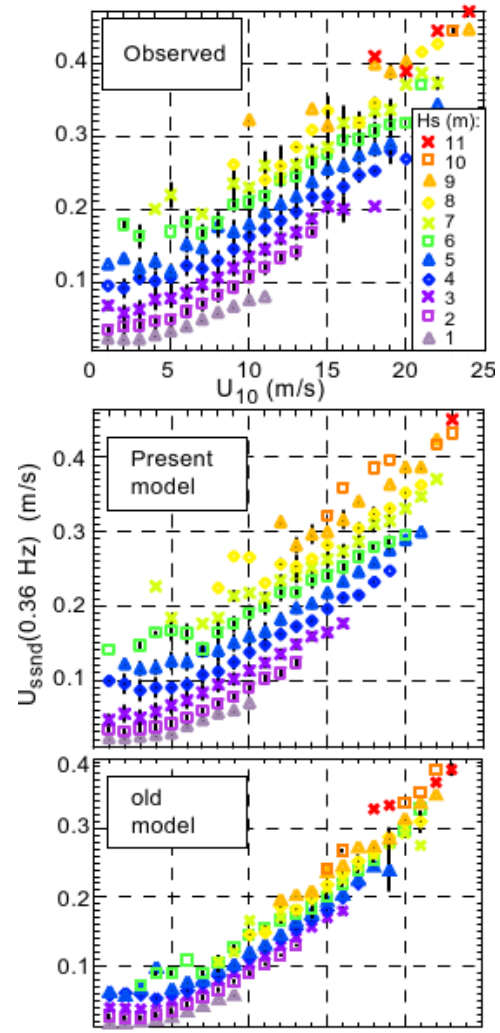
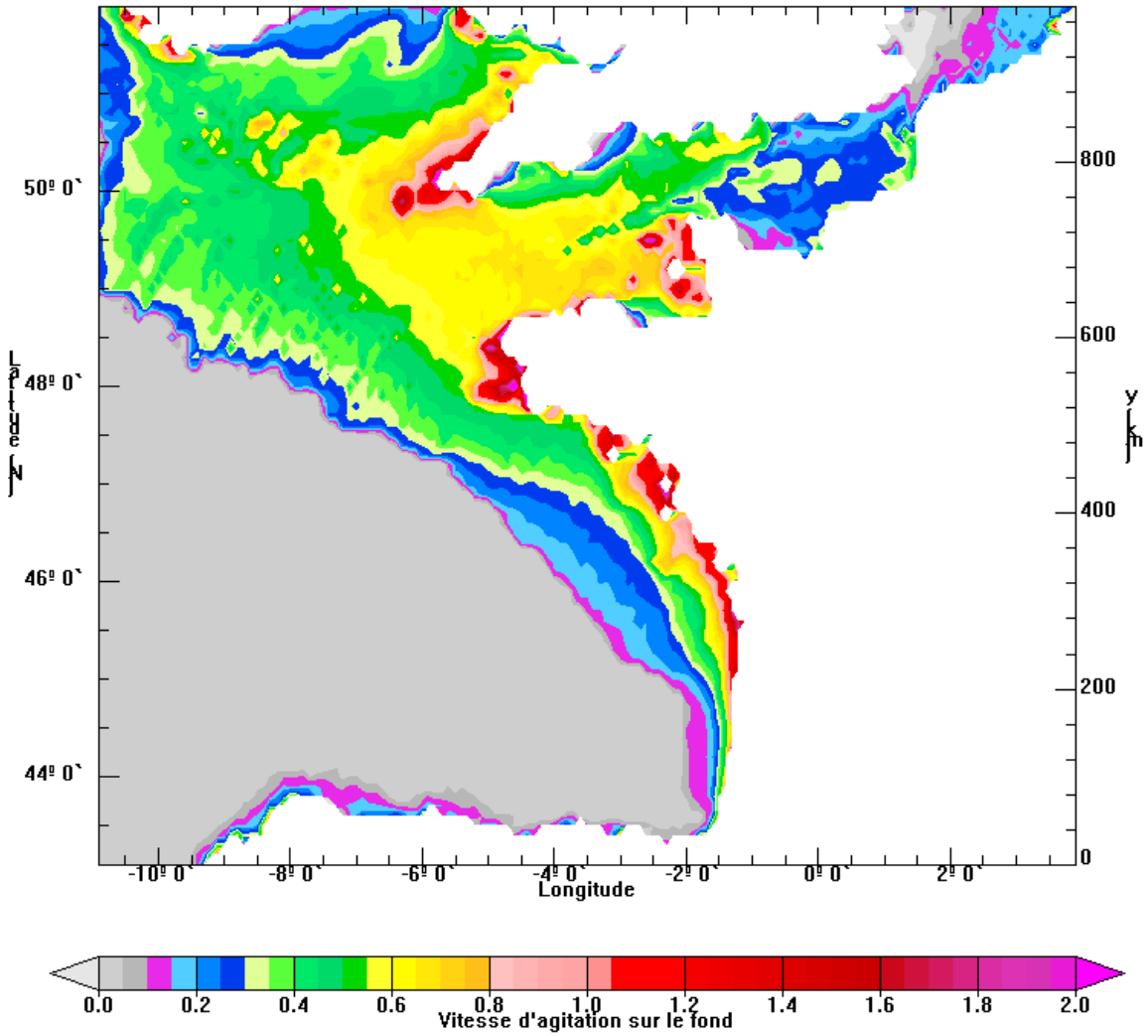




Paramètres classiques mais peu validés

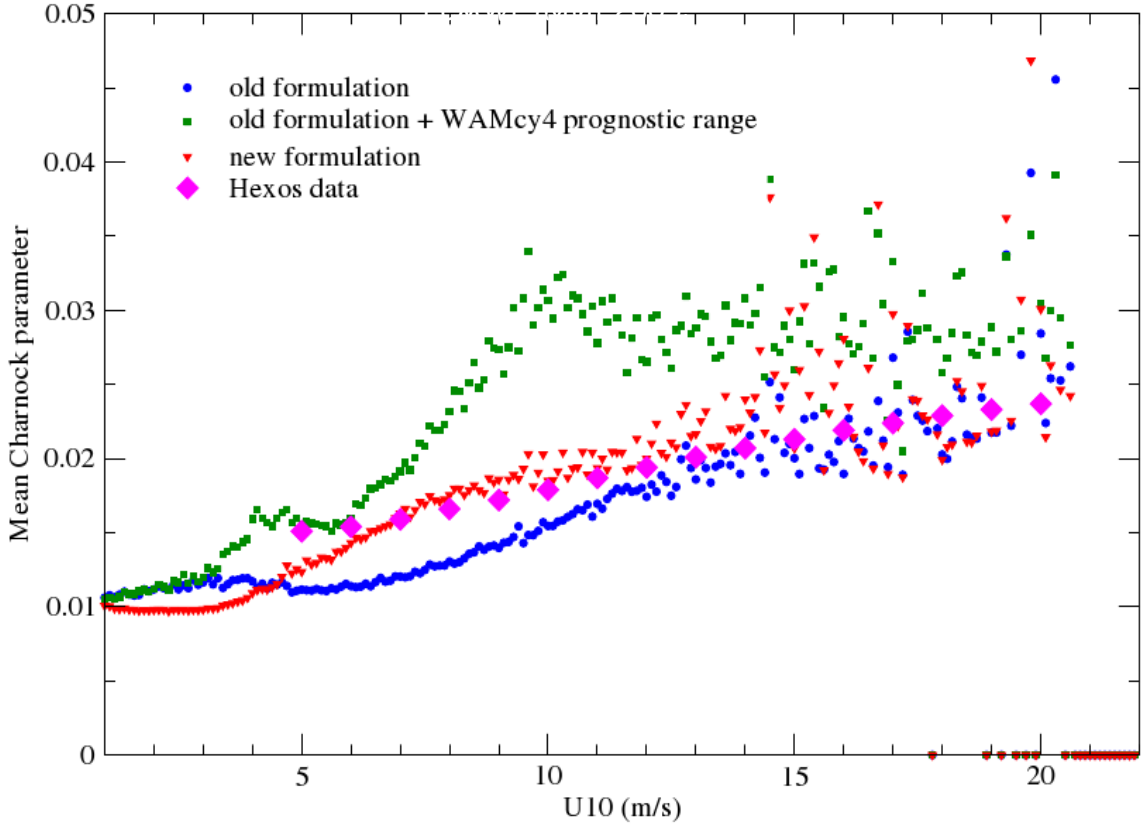
Vitesse d'agitation au fond



Paramètres classiques mais peu (pas) validés

$$\alpha\, u_\star^2$$

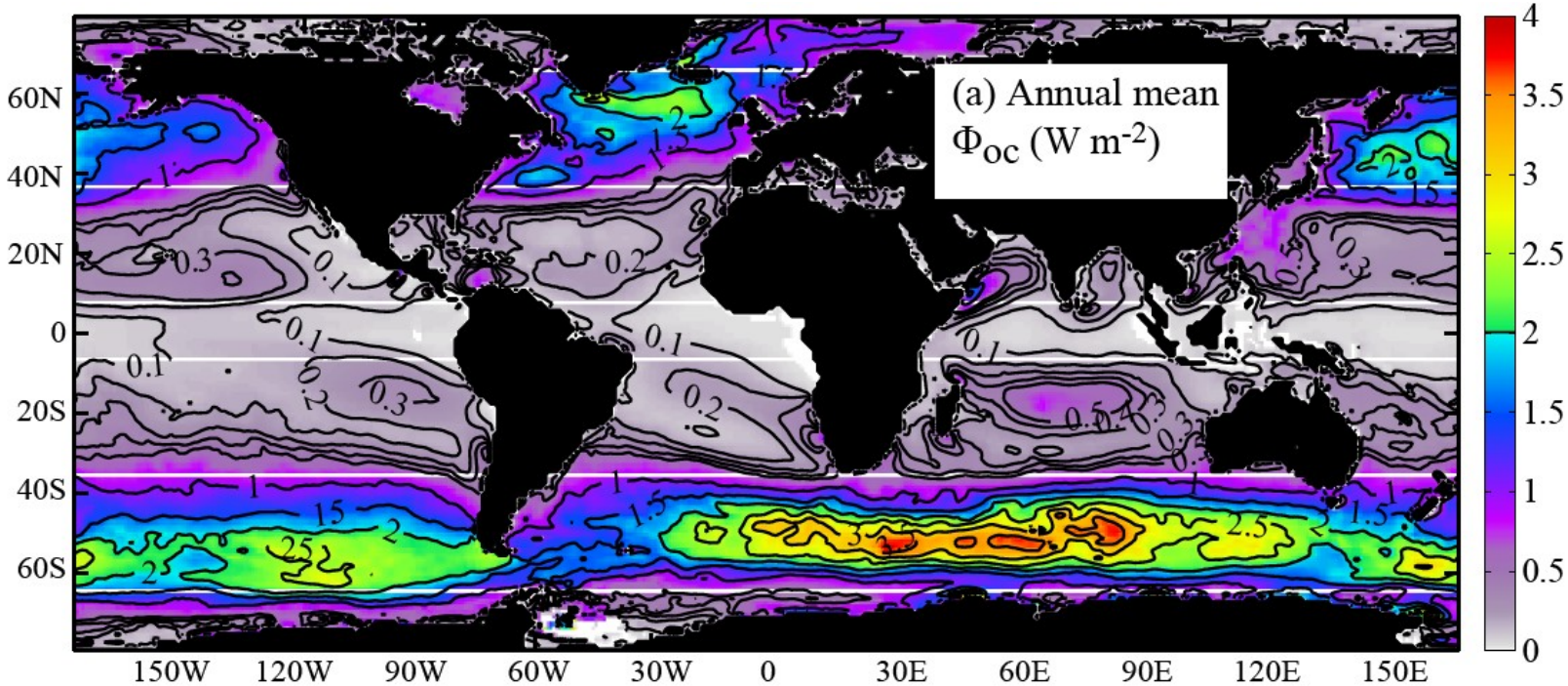
$$\alpha = \hat{\alpha}/\sqrt{1-\tau_w/\tau}$$



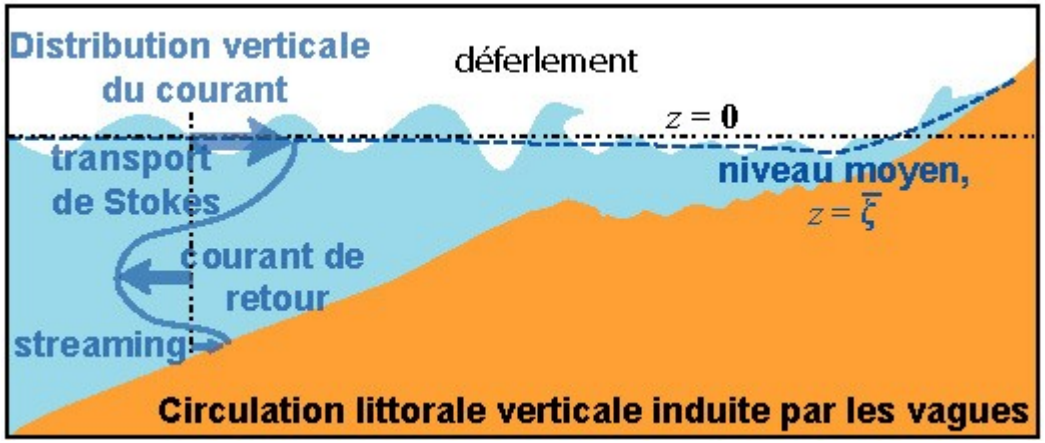
Paramètres très "exotiques" … en mal de validation

Annual mean flux of TKE (W/m²) computed for 2004

$$\Phi_{oc} = \rho_w \alpha_{CB} w_{\star}^3$$



2. Qu'est-ce qu'on sait sur le prélittoral?



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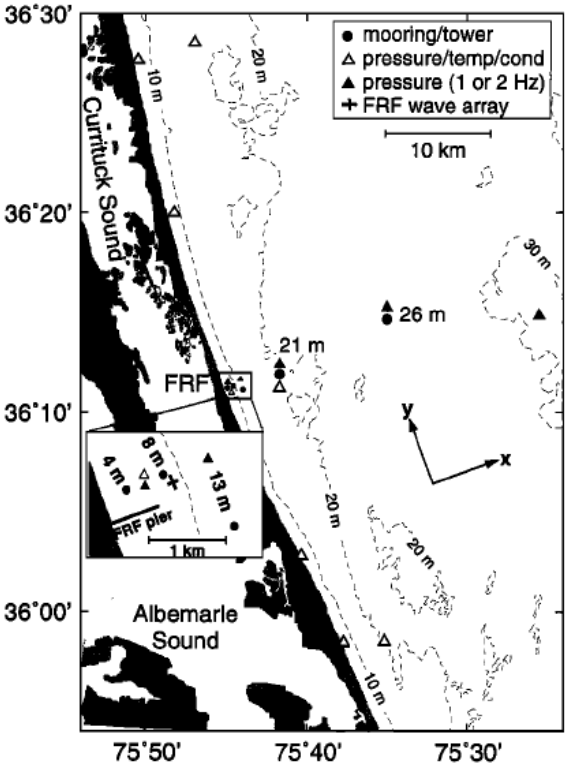

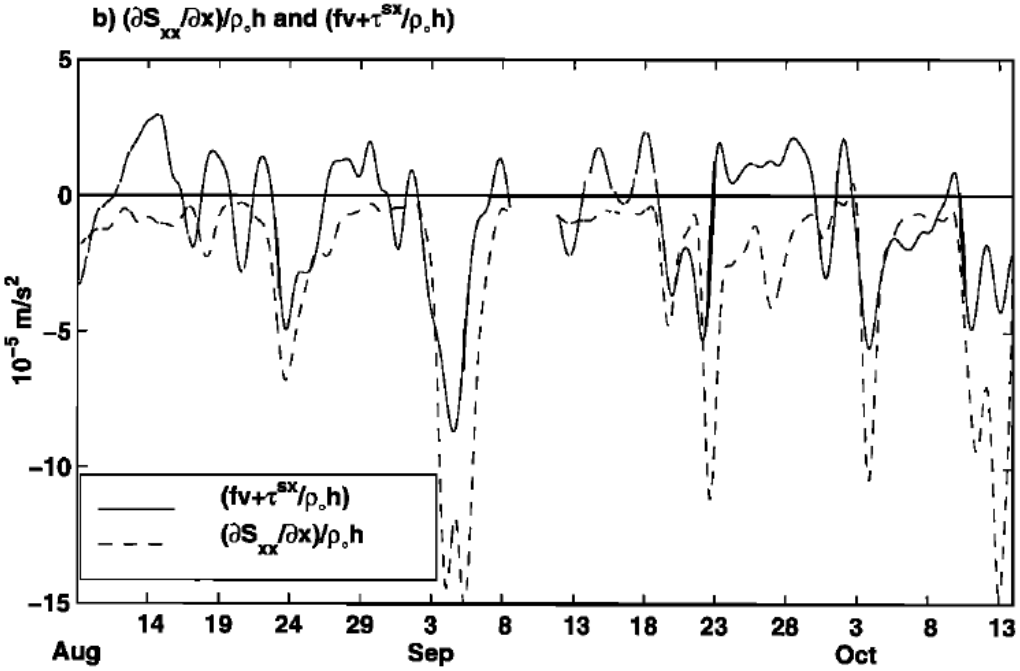

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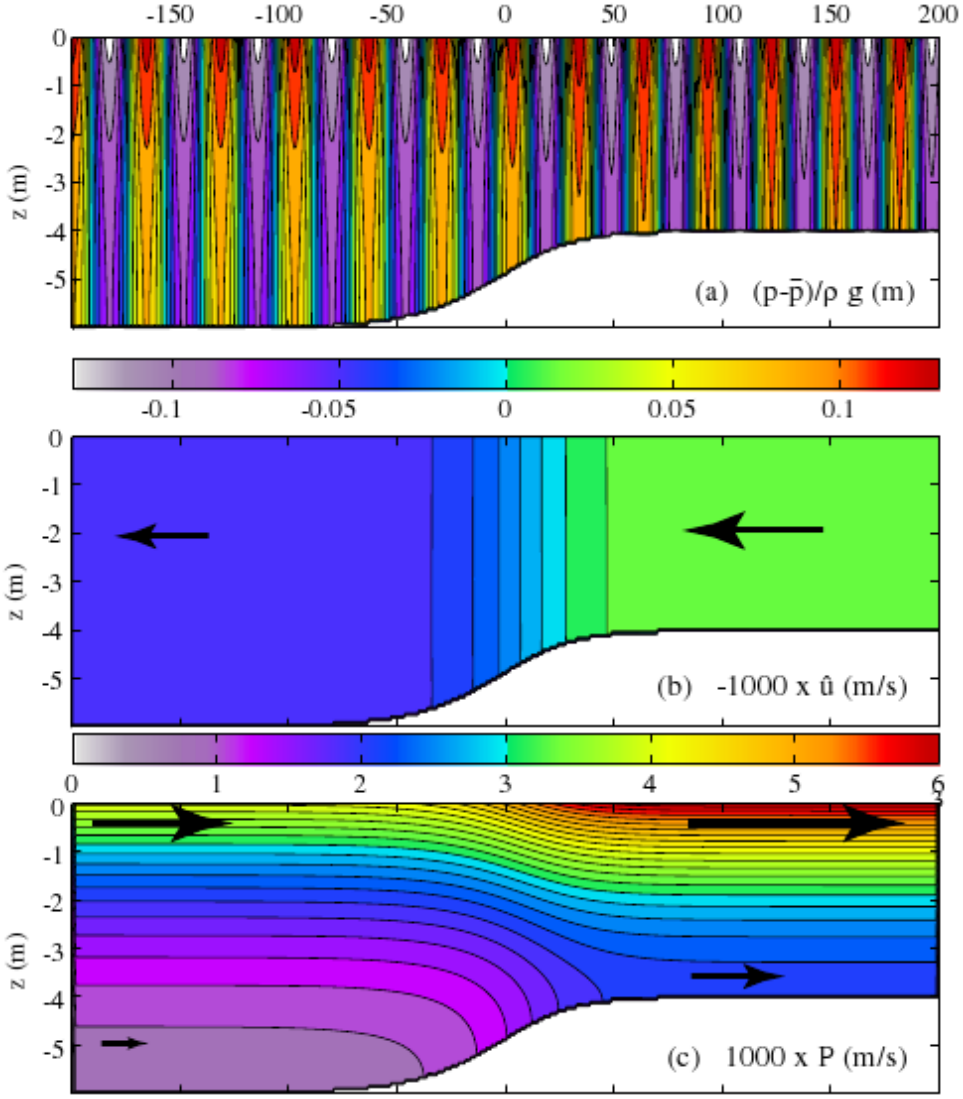

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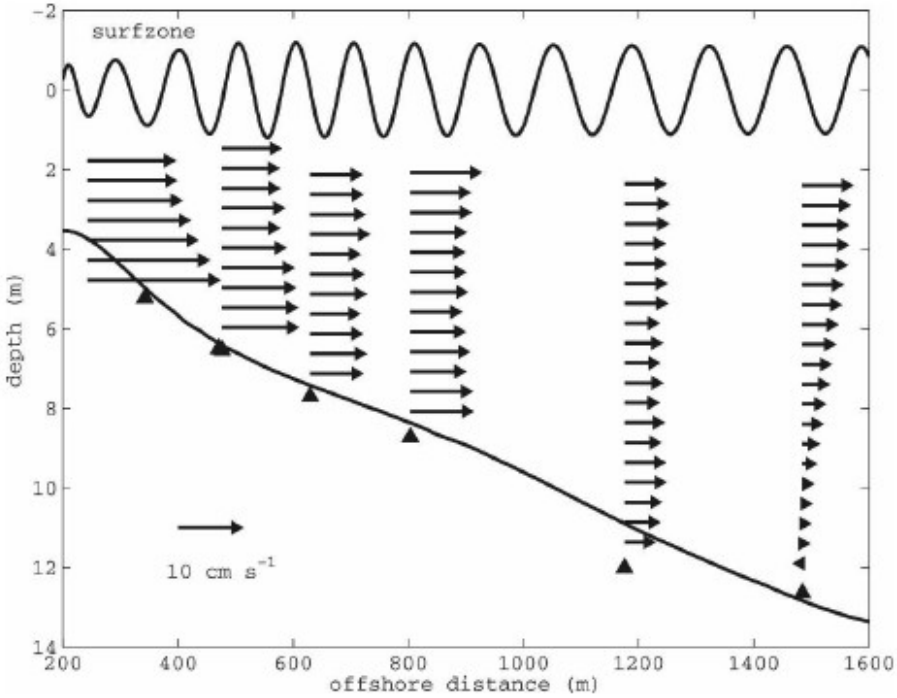

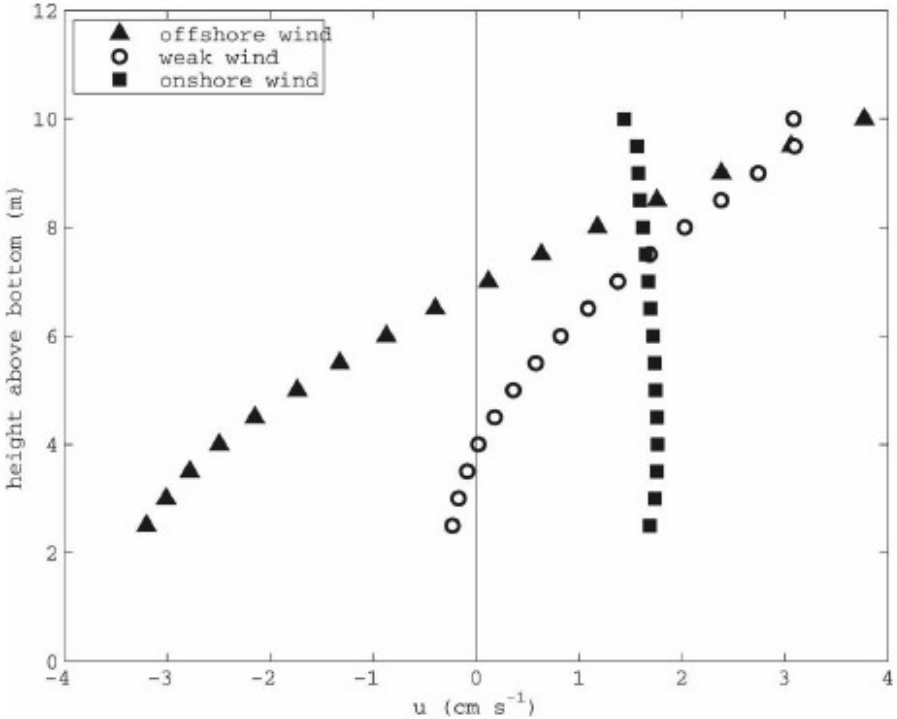

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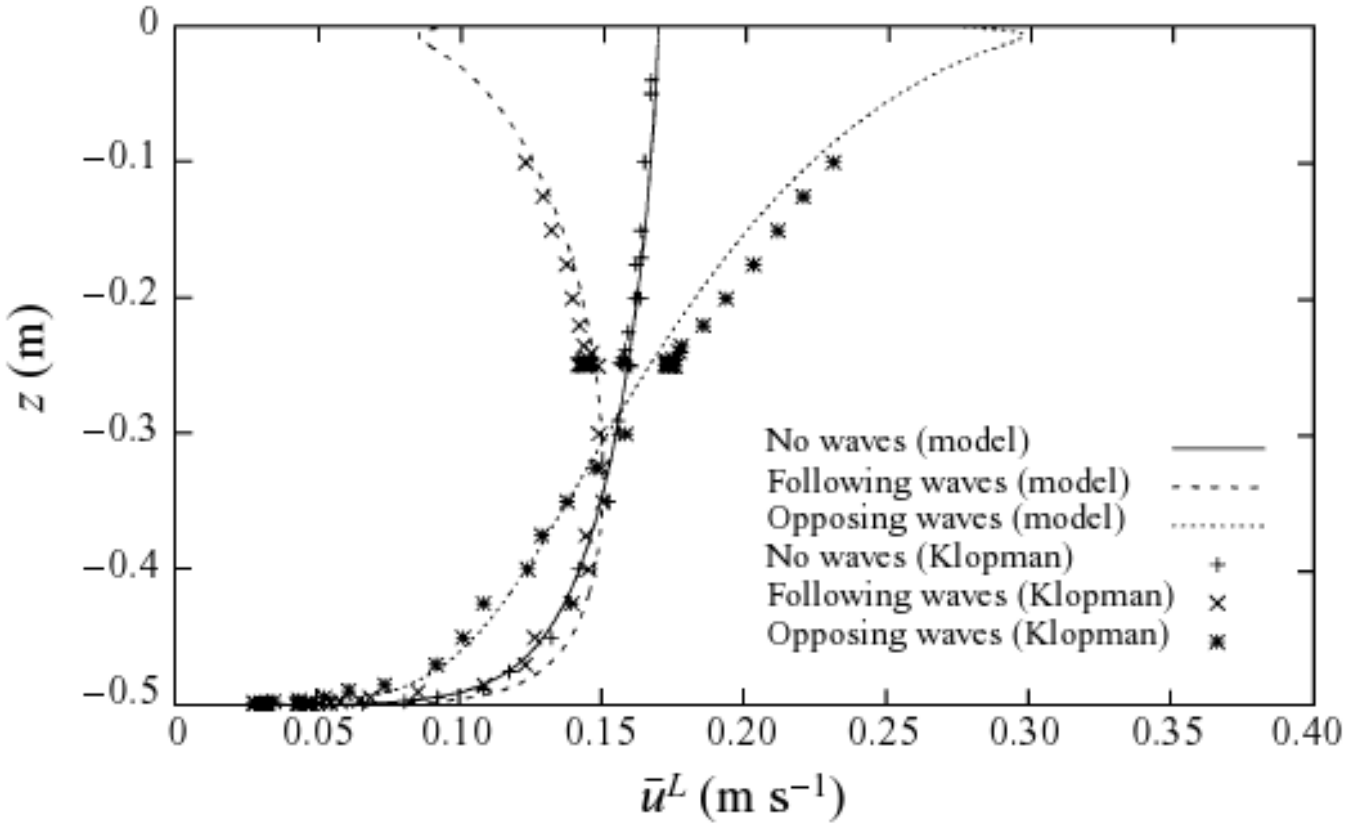

FIGURE 3. GLM results (present model) and experimental results (Klopman 1994) for the Eulerian-mean horizontal velocity profile.

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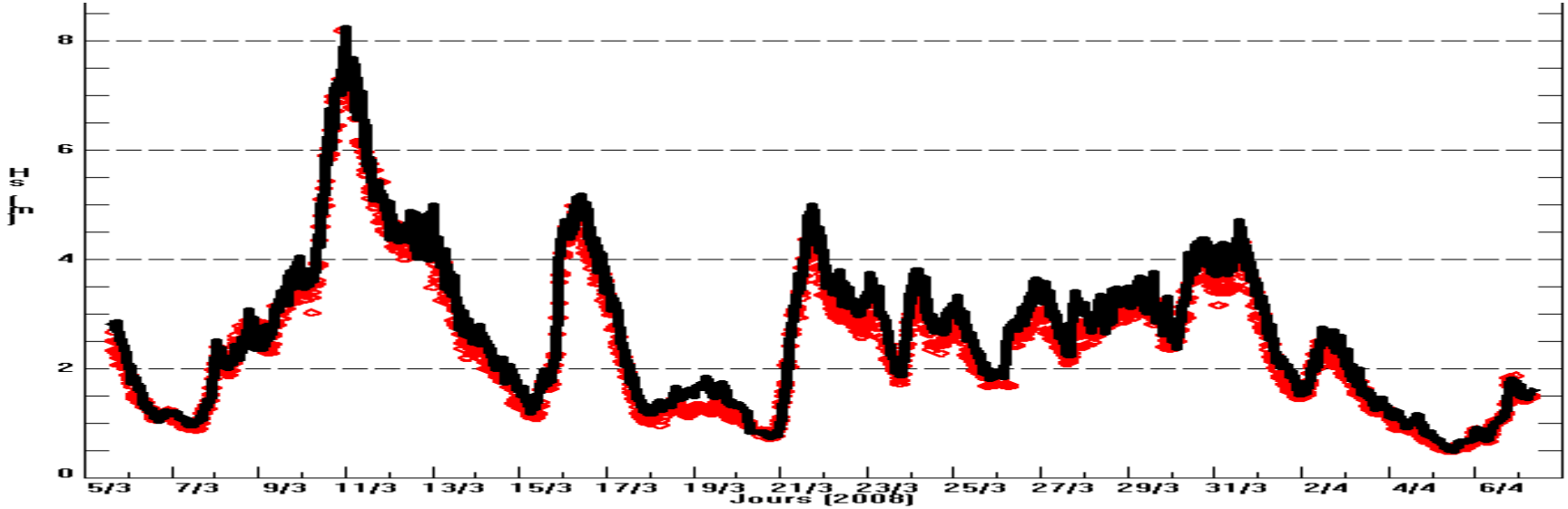
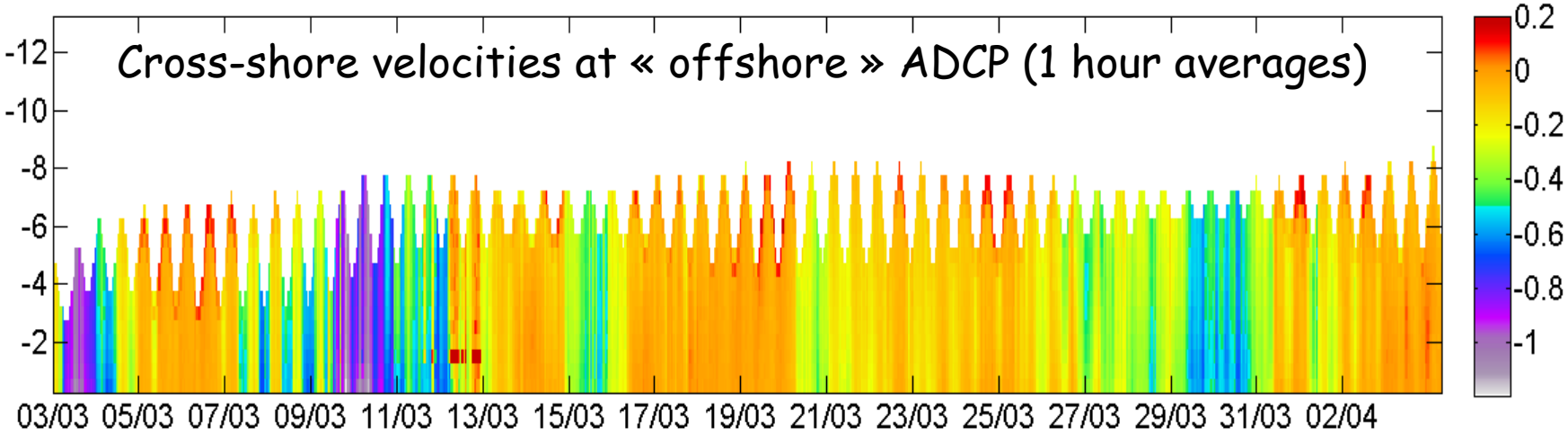
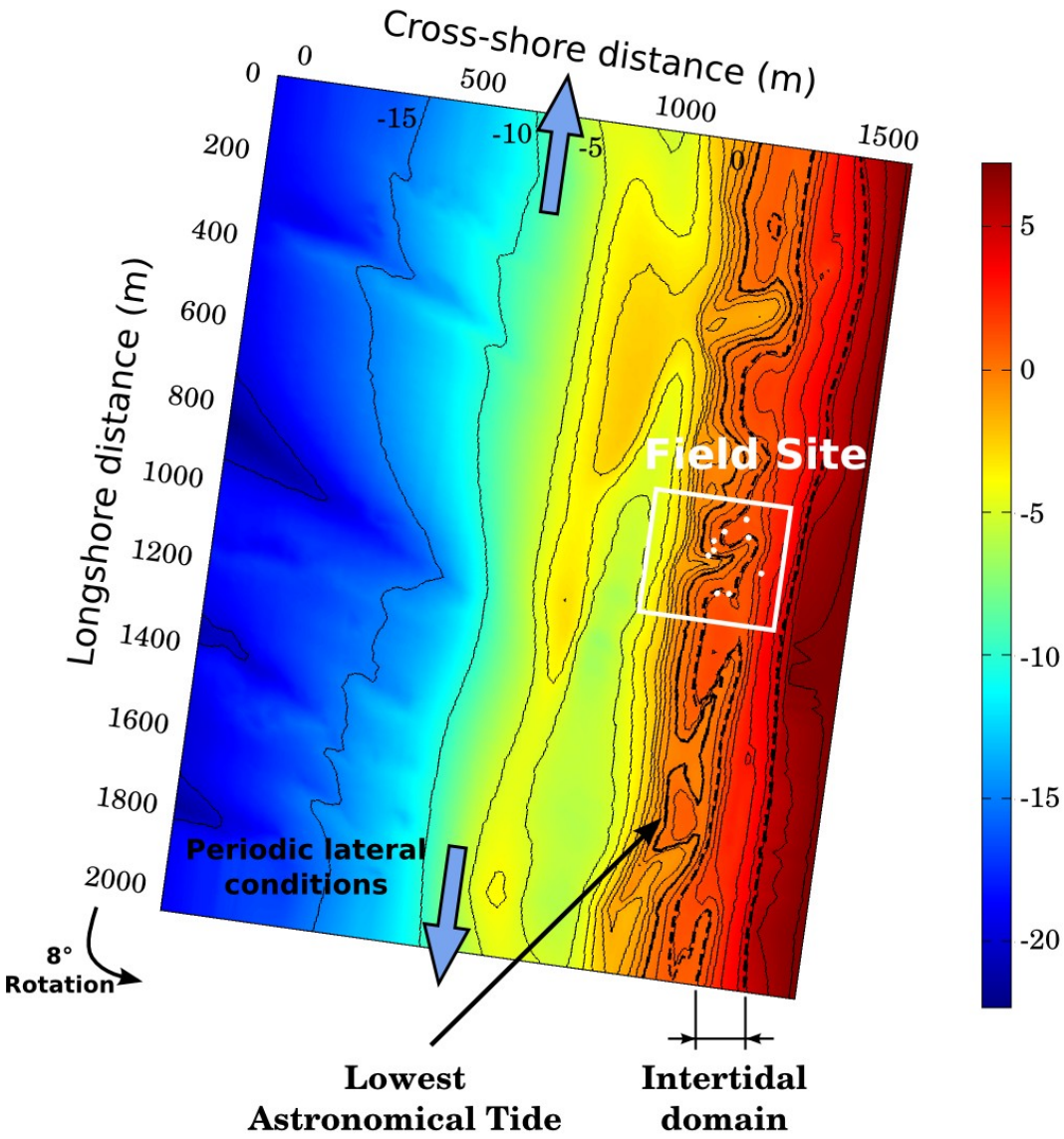
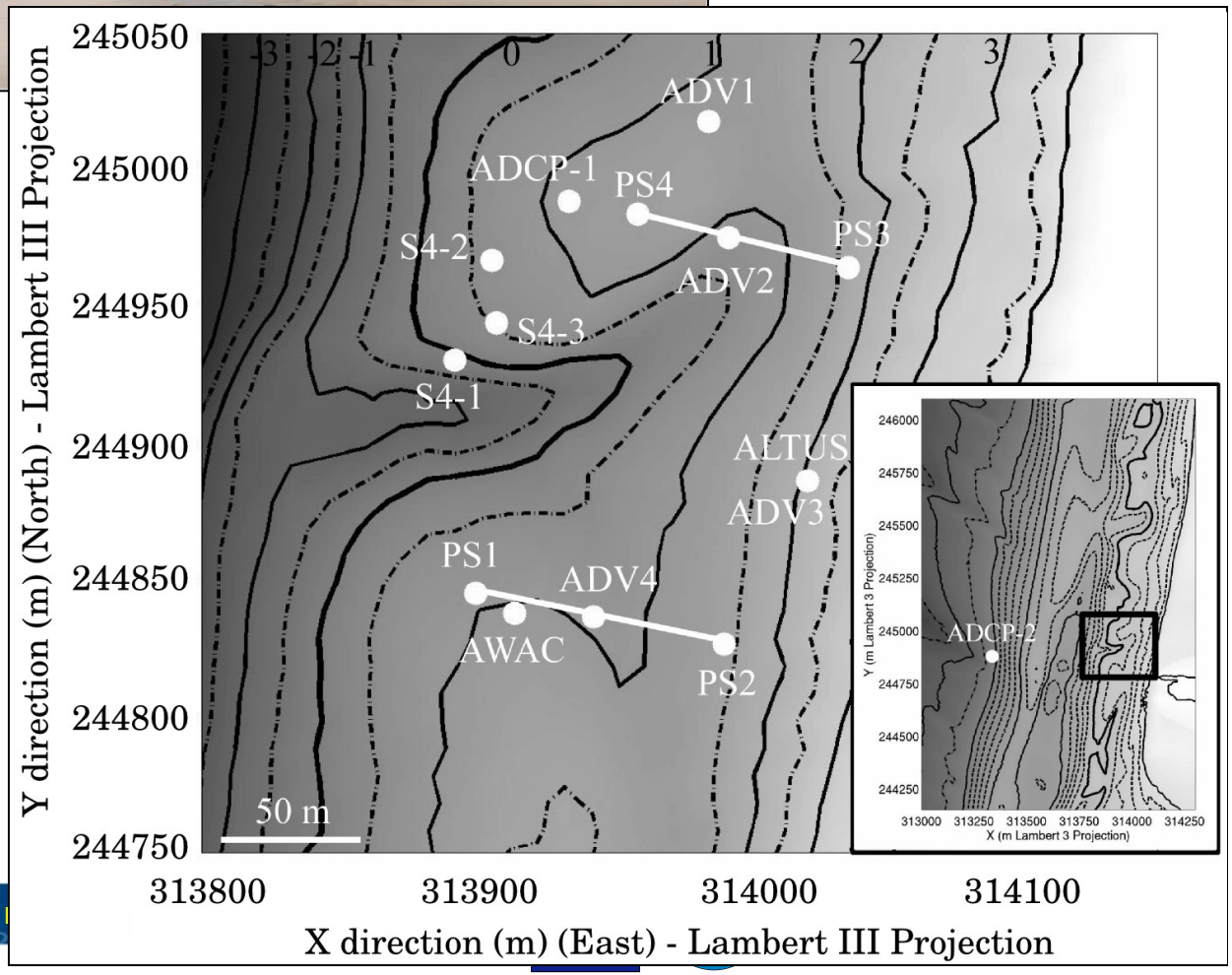




Biscarosse Beach 2007




Y direction (m) (North) - Lambert III Projection
245050
245000
244950
244900
244850
244800
244750
313800
313900
314000
314100
X direction (m) (East) - Lambert III Projection
-3
-2
-1
0
1
2
3
ADV1
ADCP-1
PS4
PS3
S4-2
ADV2
S4-3
S4-1
ALTUS
ADV3
PS1
ADV4
AWAC
PS2
50 m
ADCP-2
Y (m Lambert 3 Projection)
X (m Lambert 3 Projection)
246000
245750
245500
245250
245000
244750
244500
244250
313000
313250
313500
313750
314000
314250

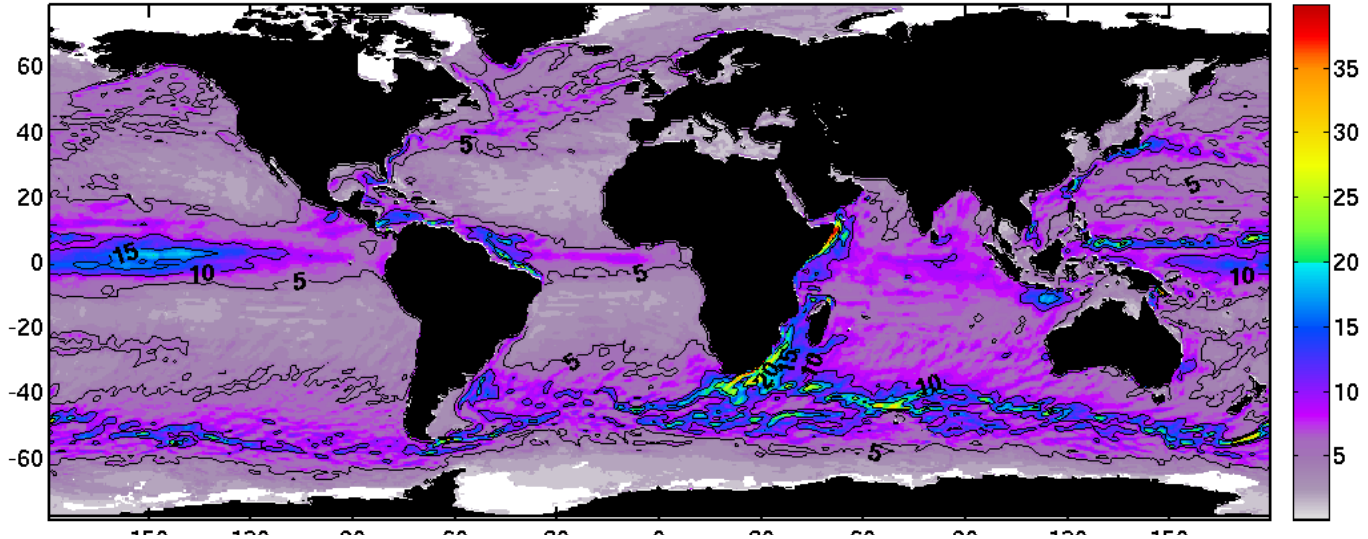
3. Campagnes EPIGRAM

2010: Avril (?) - Juin (?)

6 ADCP dans le prolongement de la radiale 42° N (?): étude du transport cross-shore

2011 ou 2012: études sur des aspects 3D (Biscarosse ?)

3. Ongoing developments

- Work on coupling with a 3D current

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