



Utilisation du RADAR pour le suivi des oiseaux marins



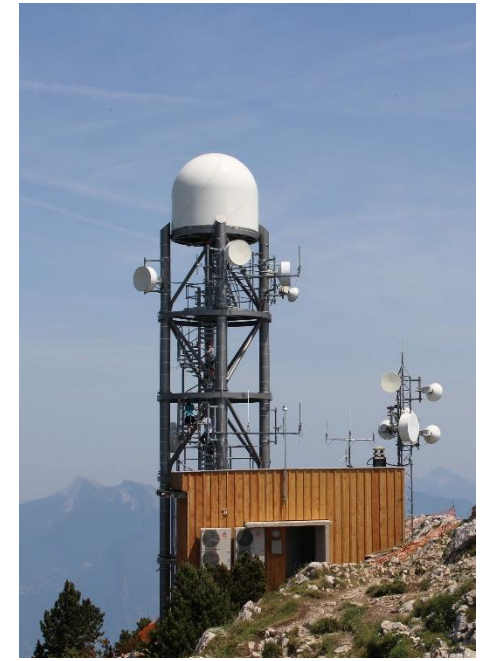
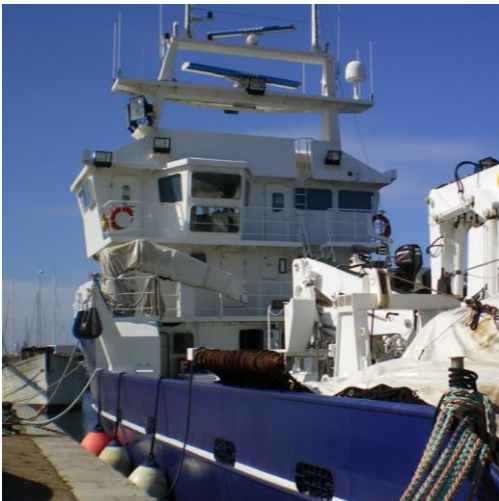
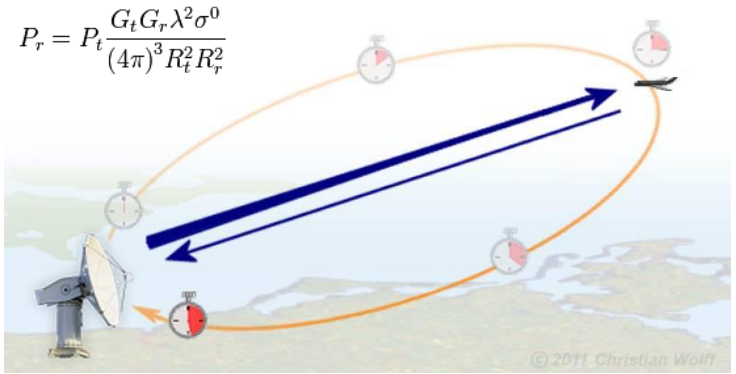
RADAR = RADio Detection And Ranging

Emission/réception d'ondes électromagnétiques, en ligne droite et vitesse constante (300 000 km/s)

Energie reçue proportionnelle à :

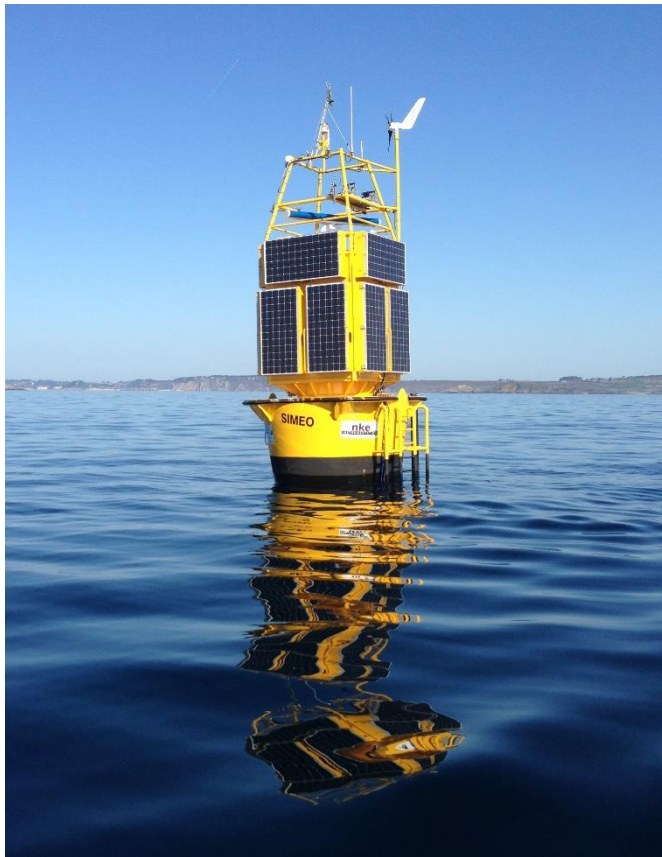
- l'énergie émise,
- la surface de réflexion de l'objet,
- l'inverse de la distance

Bande X, bande S, bande C





Unités offshore



BIOTOPE - RESOM - Presentation RADAR -
10/12/2015

Méthode (exemple de SIMEO)

Radar
(avifaune)

Vidéo aérienne
(avifaune)

Acoustique aérienne
(chiroptères)

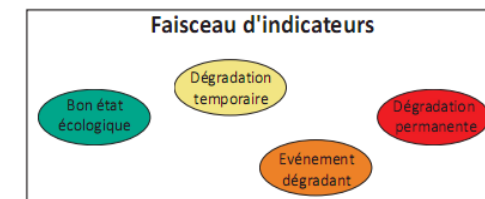
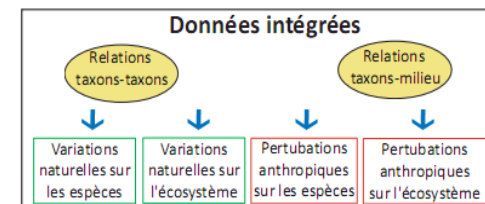
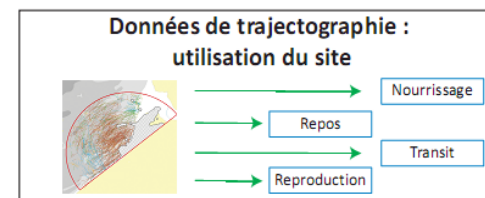
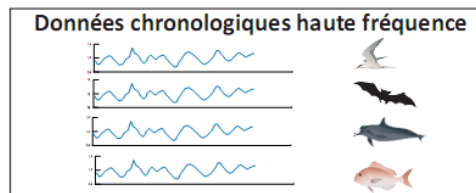
Station météorologique

Sondeur
(poissons)

Vidéo sous-marine
(poissons)

Acoustique sous-marine
(cétacés)

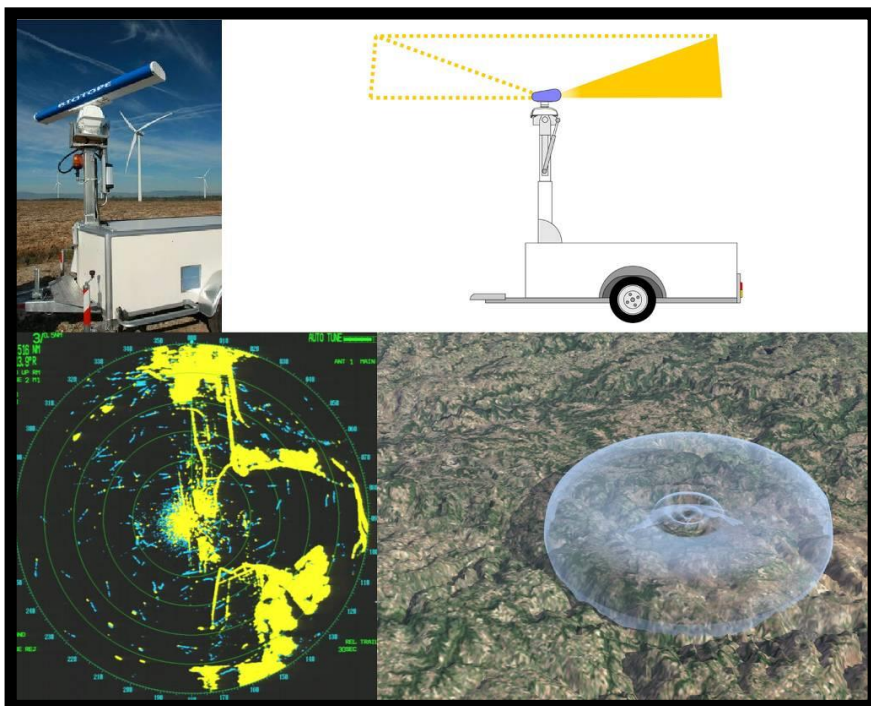
Sonde multi-paramètres SMATCH
(CTD/Turbidité/Fluorescence a)



Partenaires : IRD, IFREMER, NKE

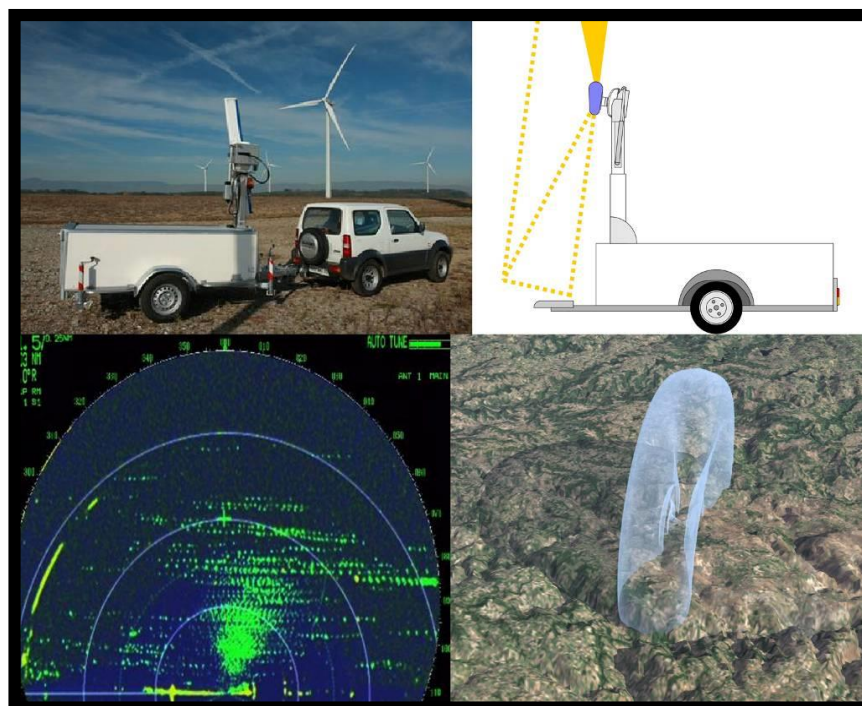
Modes de fonctionnement

Mode horizontal



=> Trajectoires
=> Utilisation spatiale

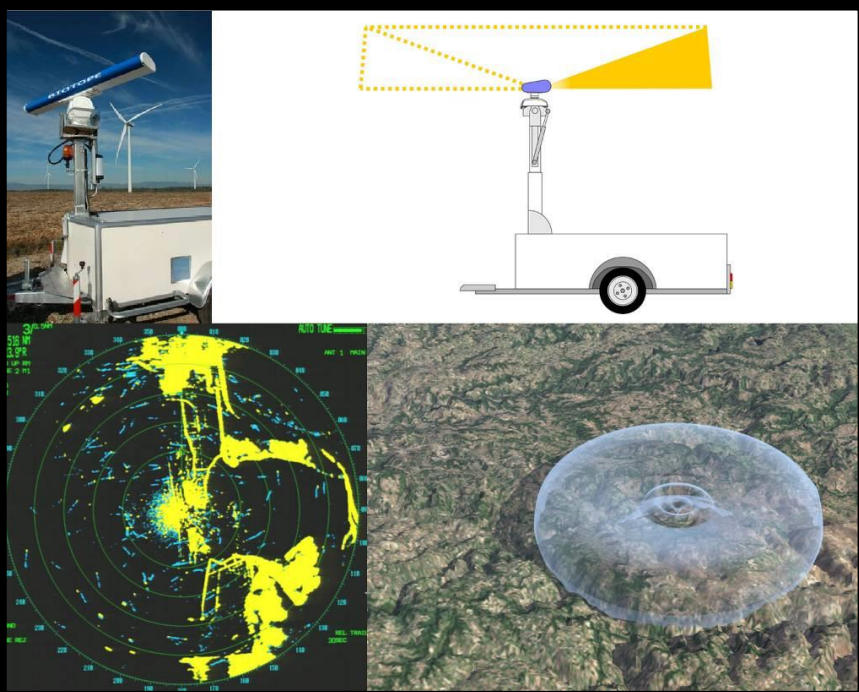
Mode vertical



=> Altitudes de vol
=> Flux

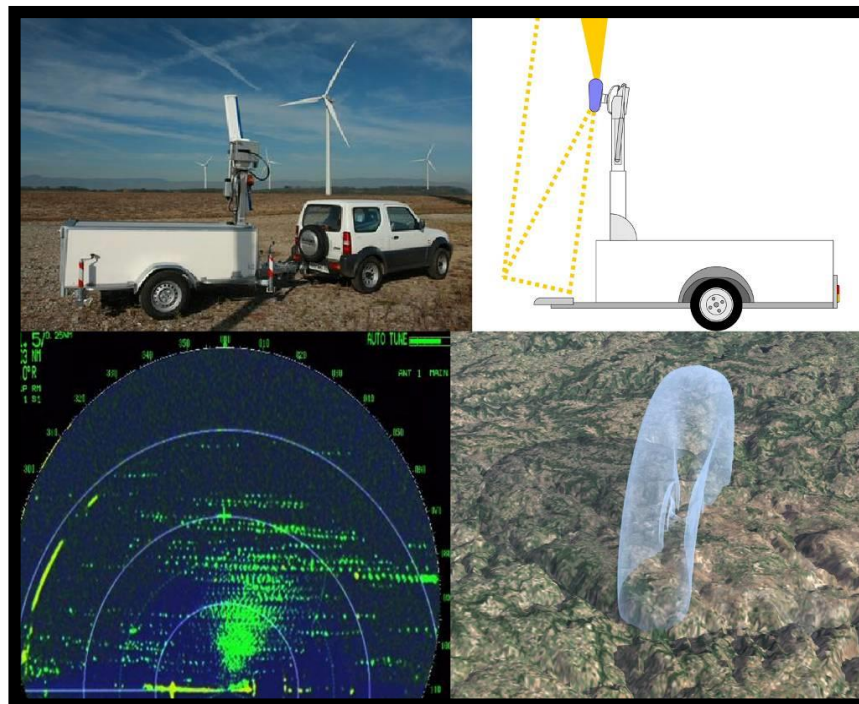
Modes de fonctionnement

Mode horizontal

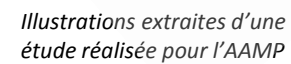


=> Trajectoires
=> Utilisation spatiale

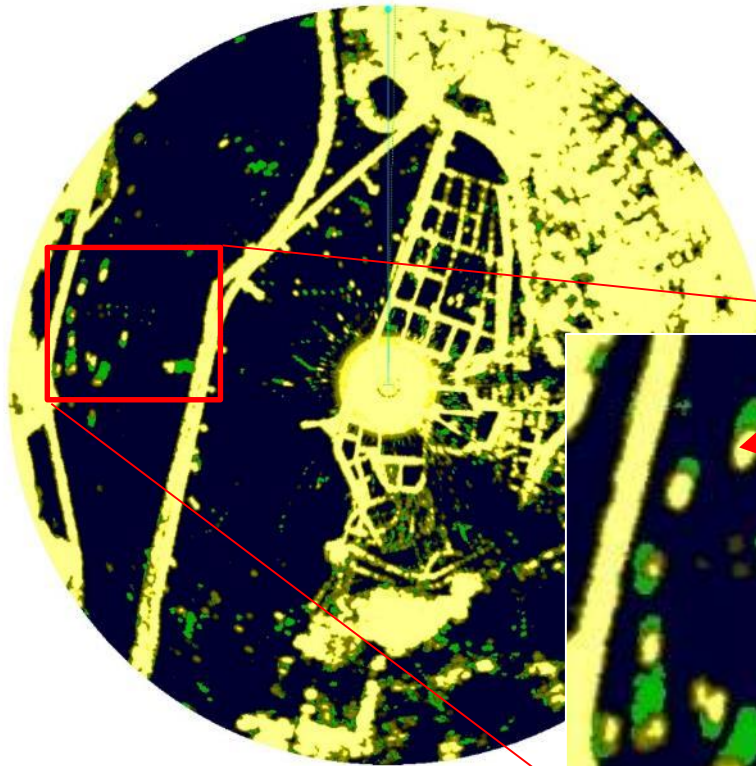
Mode vertical



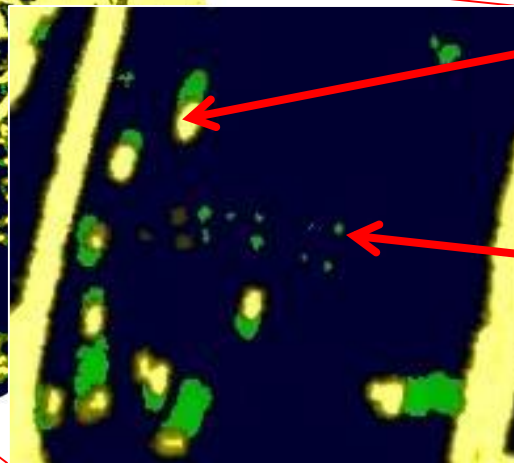
=> Altitudes de vol
=> Flux



Interactions avec les activités nautiques



Exemple de comportement de
Sternes pierregarin au niveau
d'une zone de navigation de
Kite surf

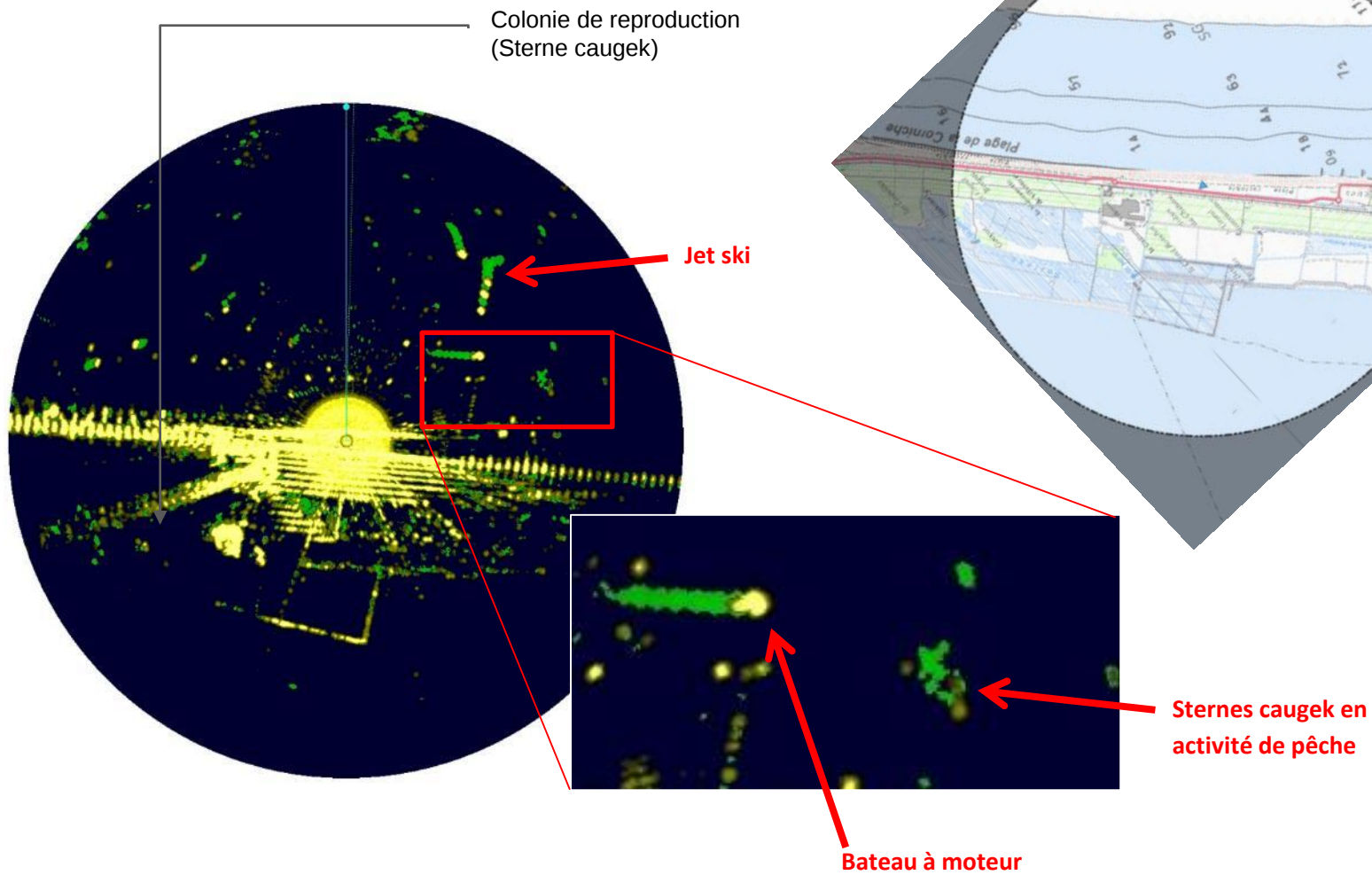


Kite surf

Sternes pierregarin

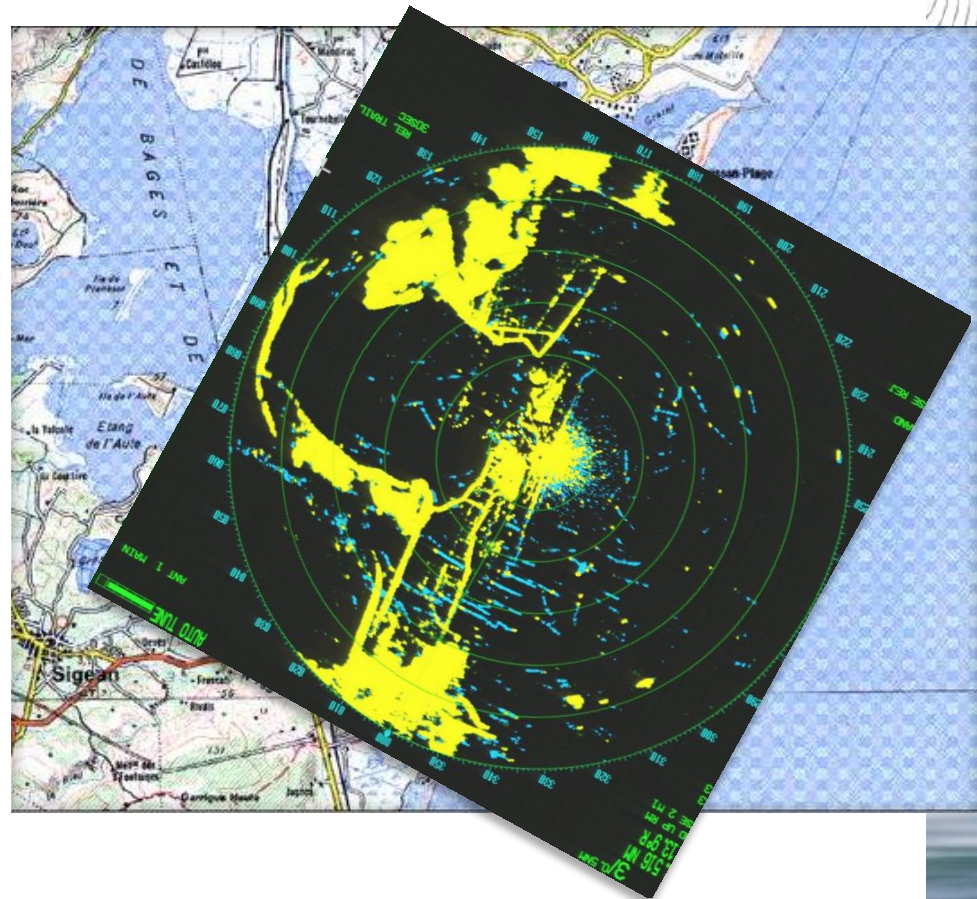
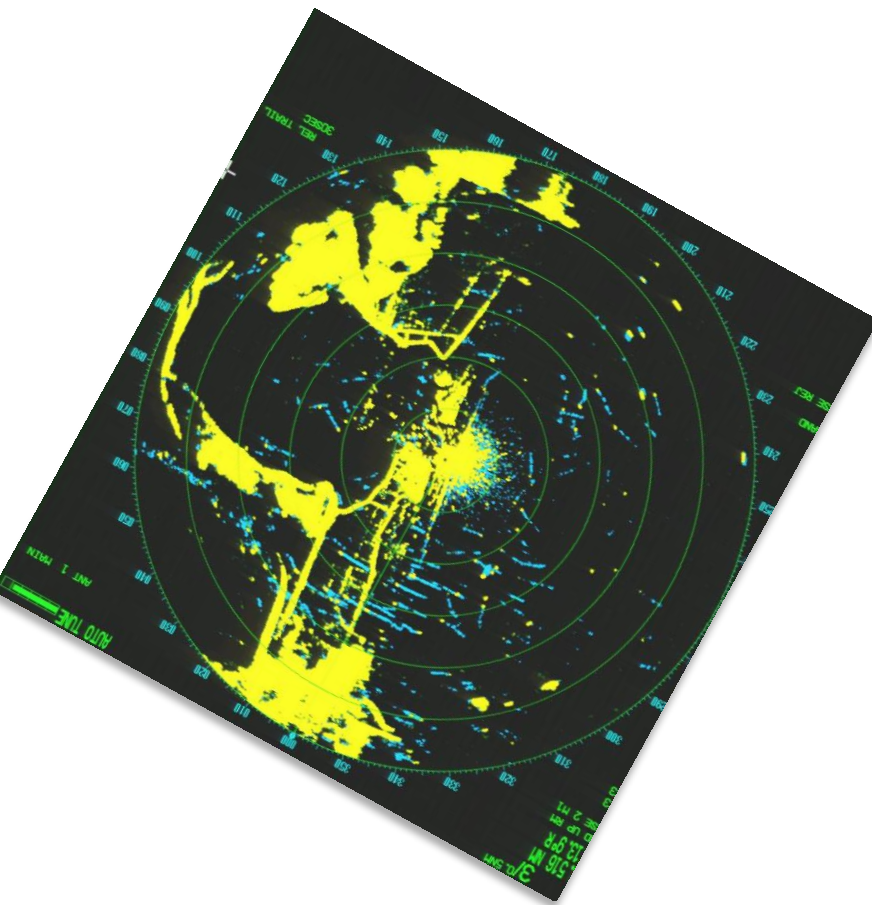
Illustrations extraites d'une
étude réalisée pour l'AAMP

Interactions avec les activités nautiques

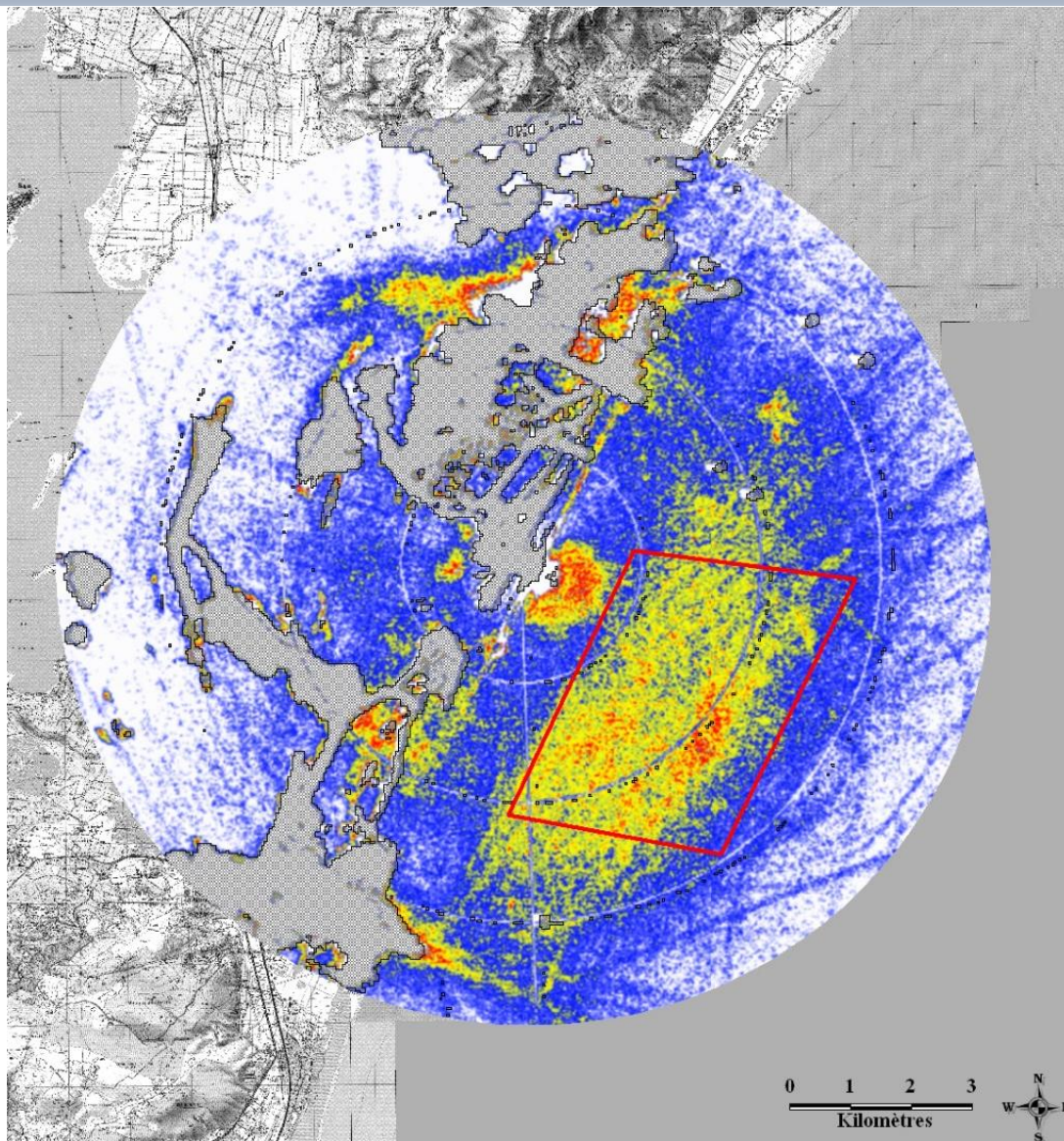


Illustrations extraites d'une
étude réalisée pour l'AAMP

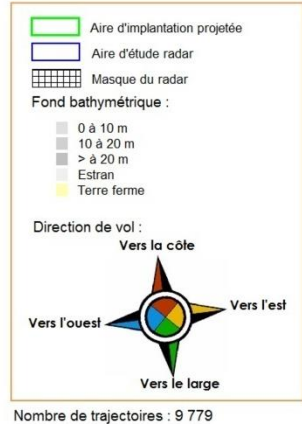
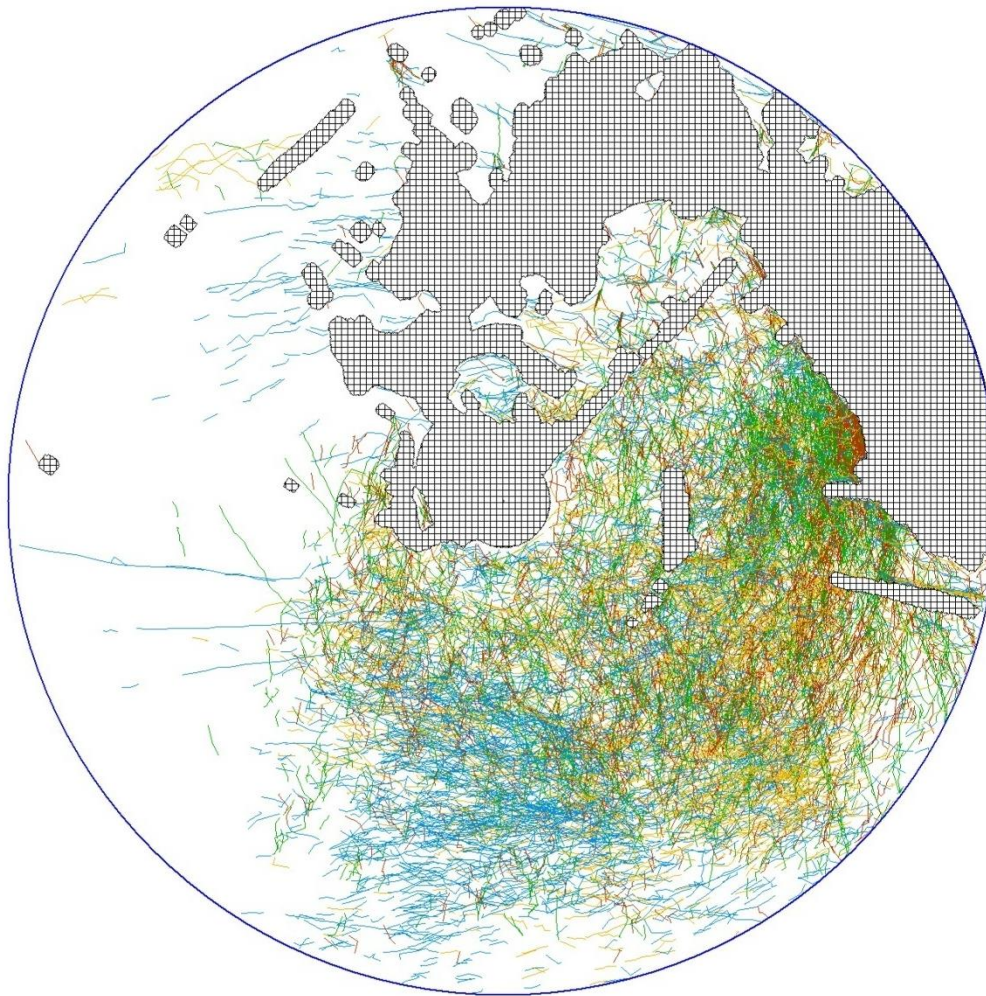
Interactions avec les bateaux de pêche



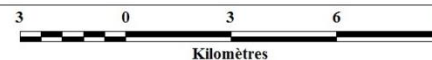
Interactions avec les bateaux de pêche



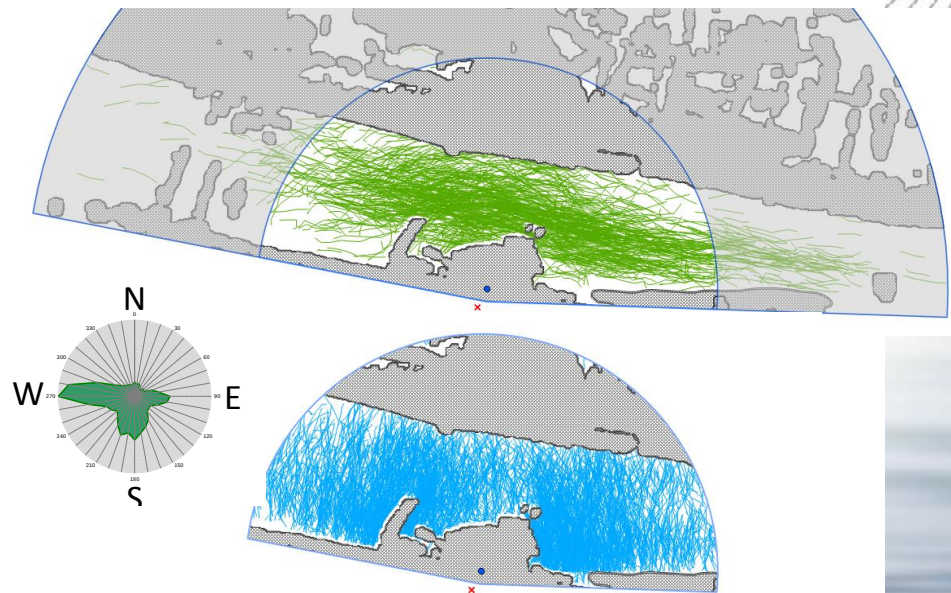
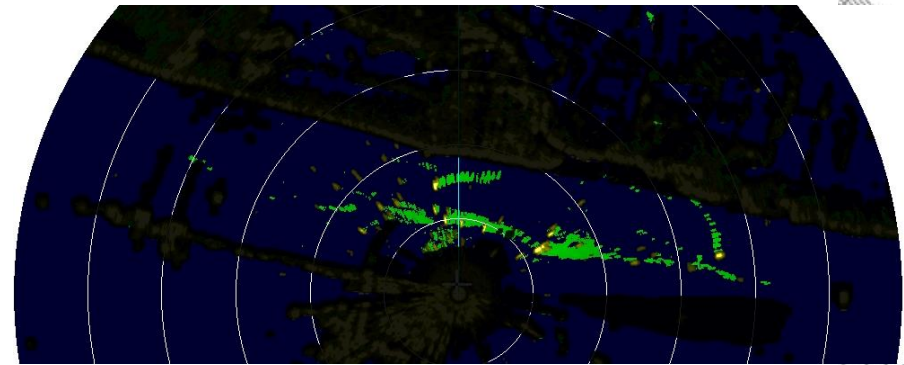
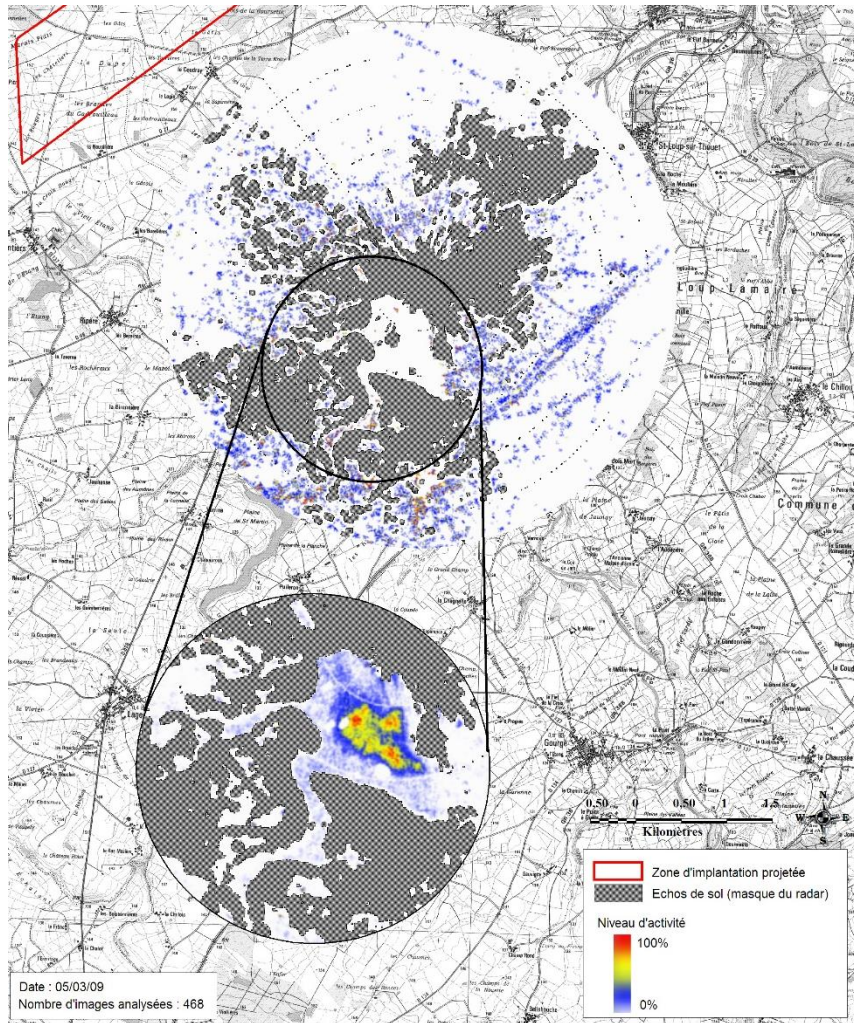
Cartes de trajectoires



Sources et cartographie : BIOTOPE, 2011. Fond : bathymétrie d'après SHOM (réalisation Biotope)

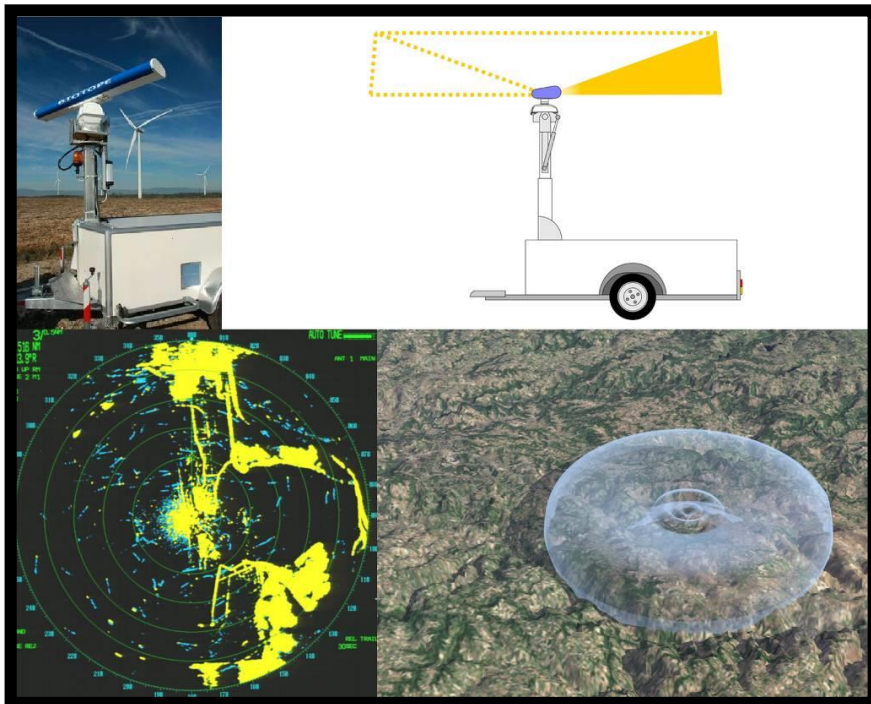


Autres applications : dortoirs, couloirs de vol, etc



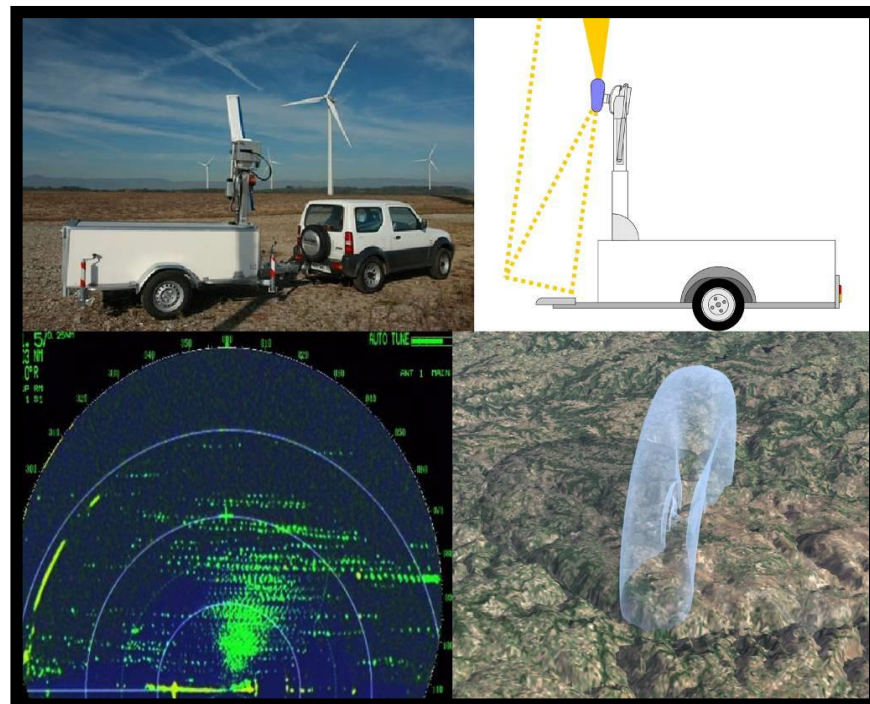
Modes de fonctionnement

Mode horizontal



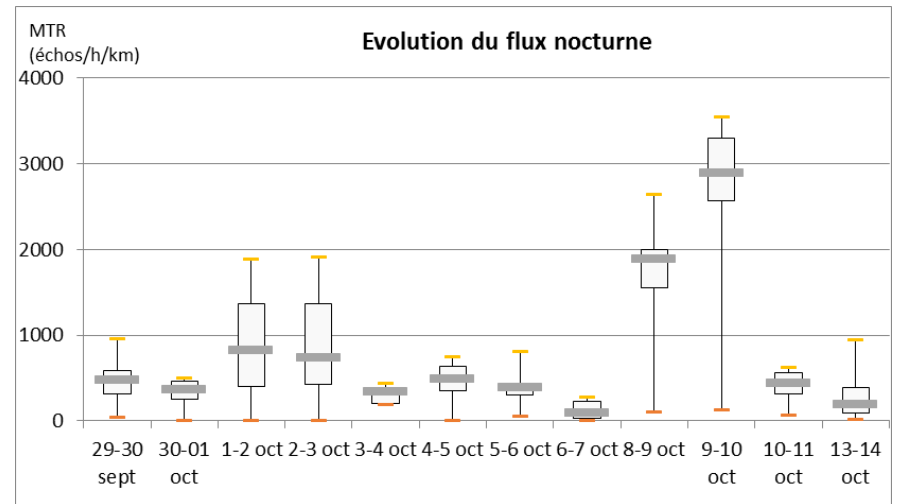
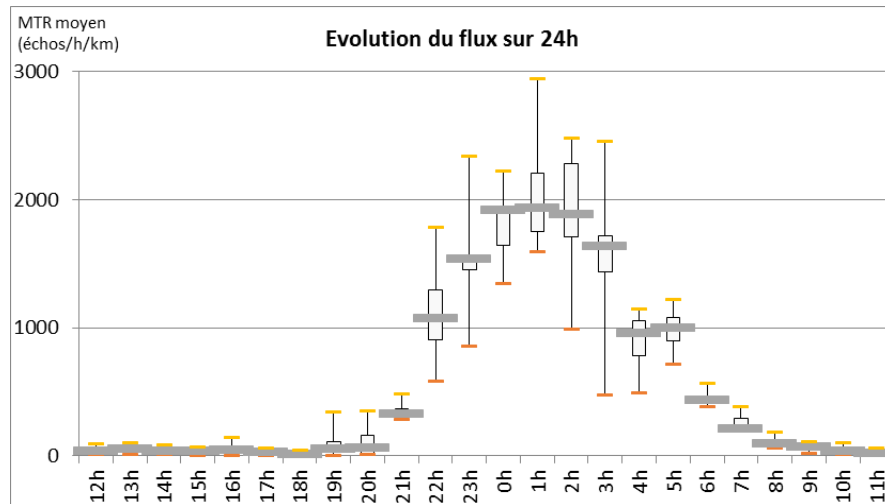
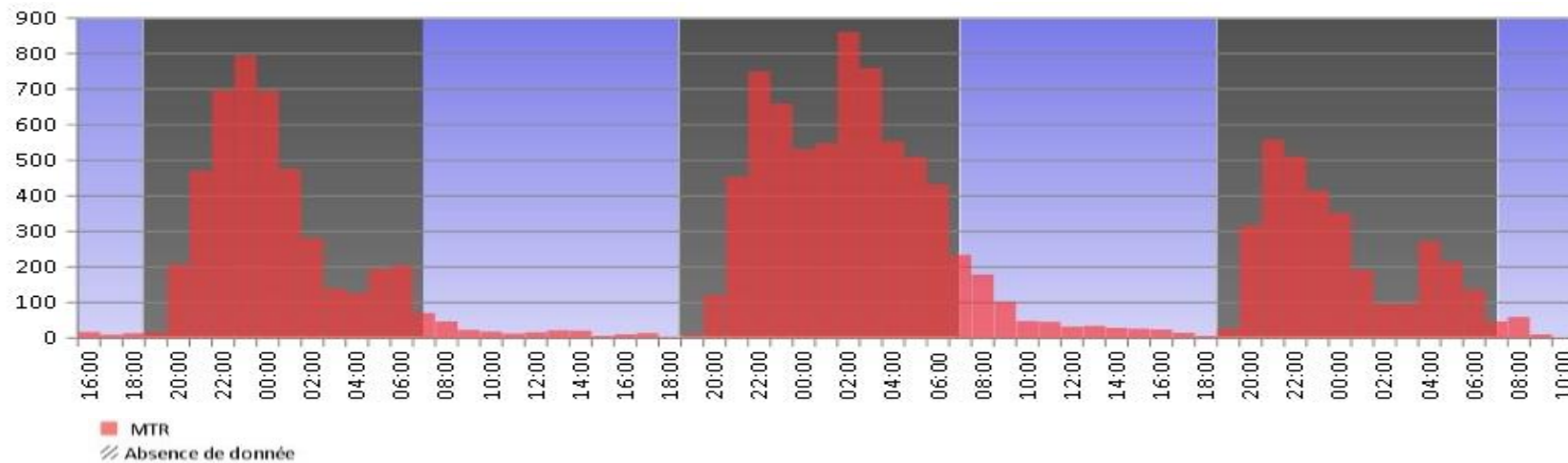
=> Trajectoires
=> Utilisation spatiale

Mode vertical

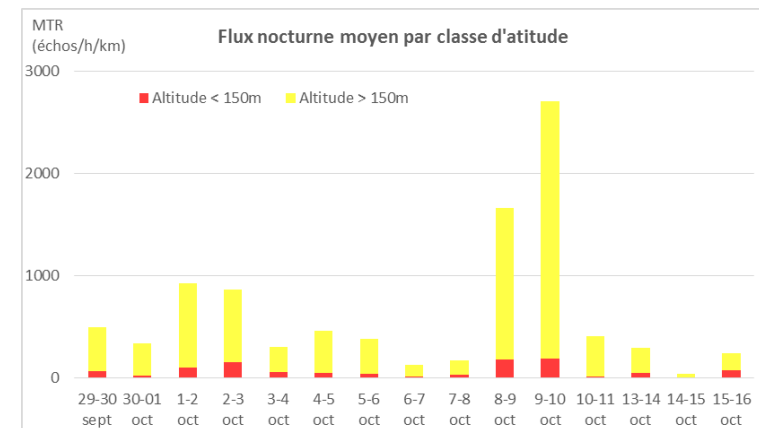
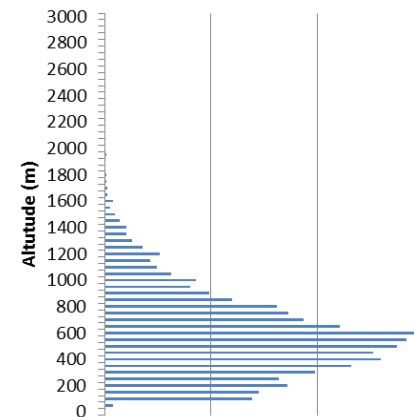
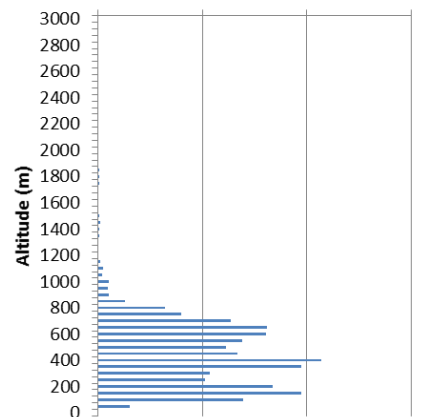
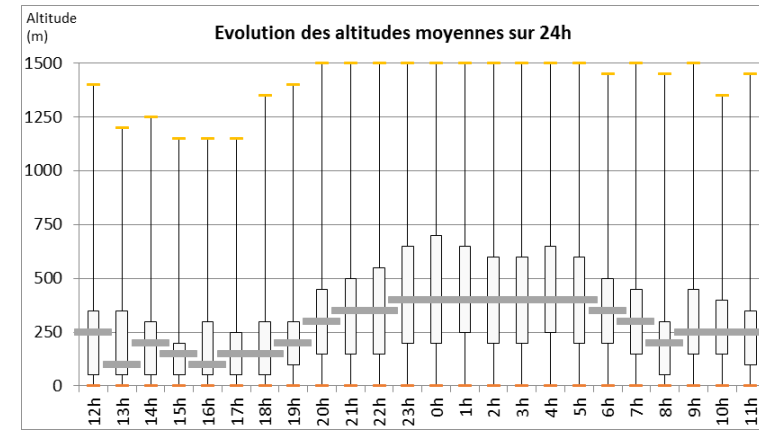
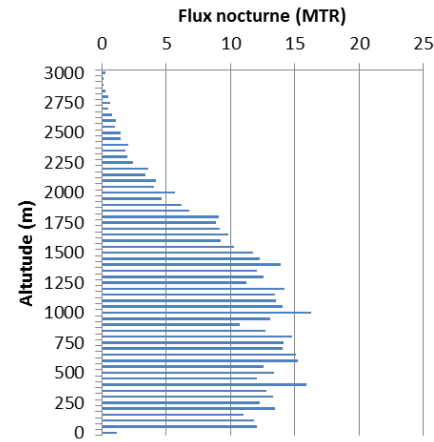
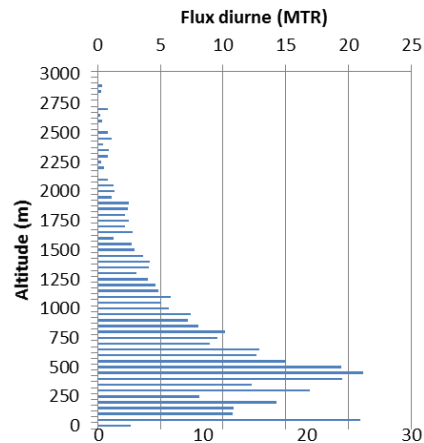


=> Altitudes de vol
=> Flux

Etude des flux de déplacement



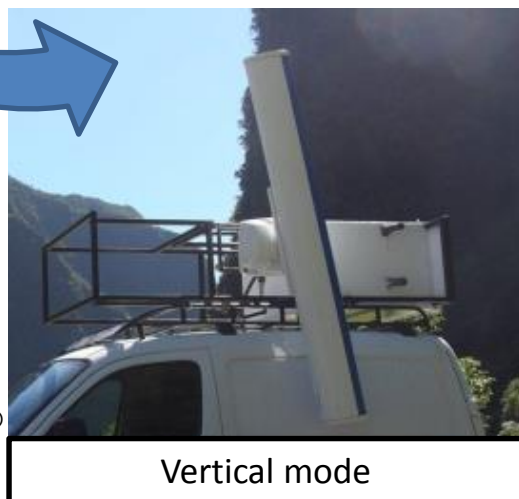
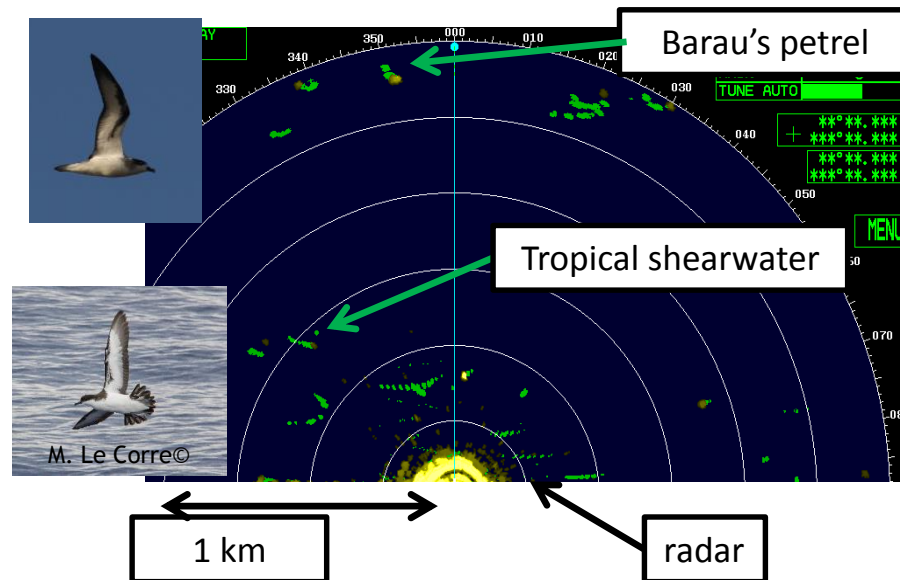
Etude des altitudes de vol



Etude des Pétrels et Puffins à la Réunion



B. Gineste ©



B. Gineste ©



Merci pour votre attention



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