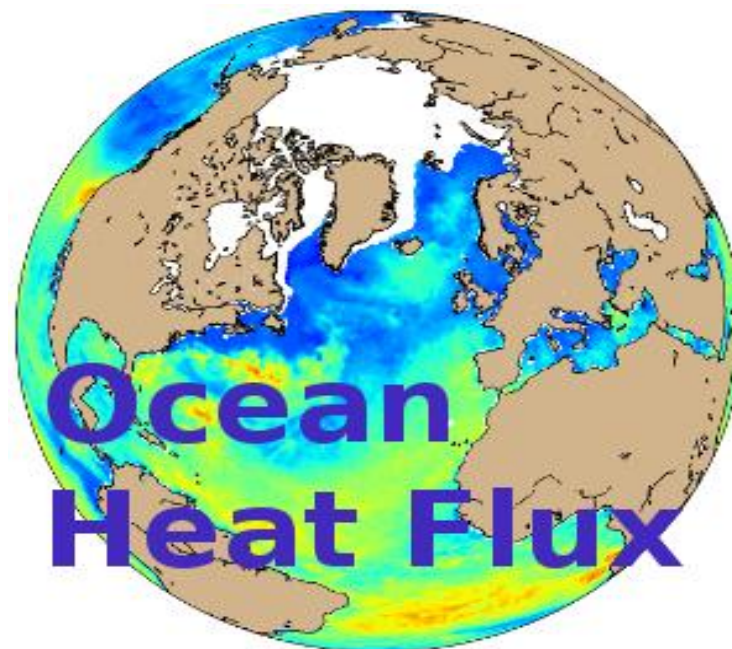




oceanflux ghg

support to science element



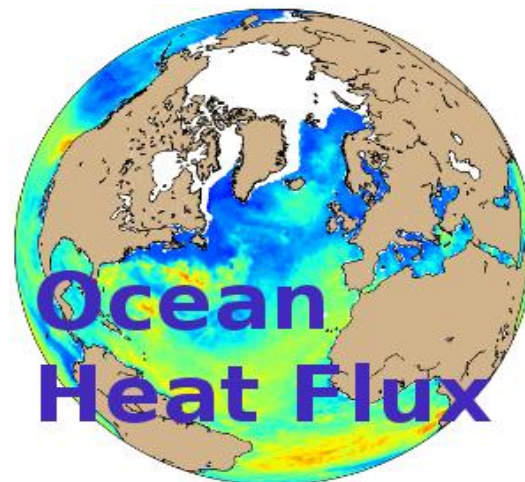
Antoine Grouazel
EO engineer IFREMER
Spatial Oceanographic Laboratory

2 ESA Projects



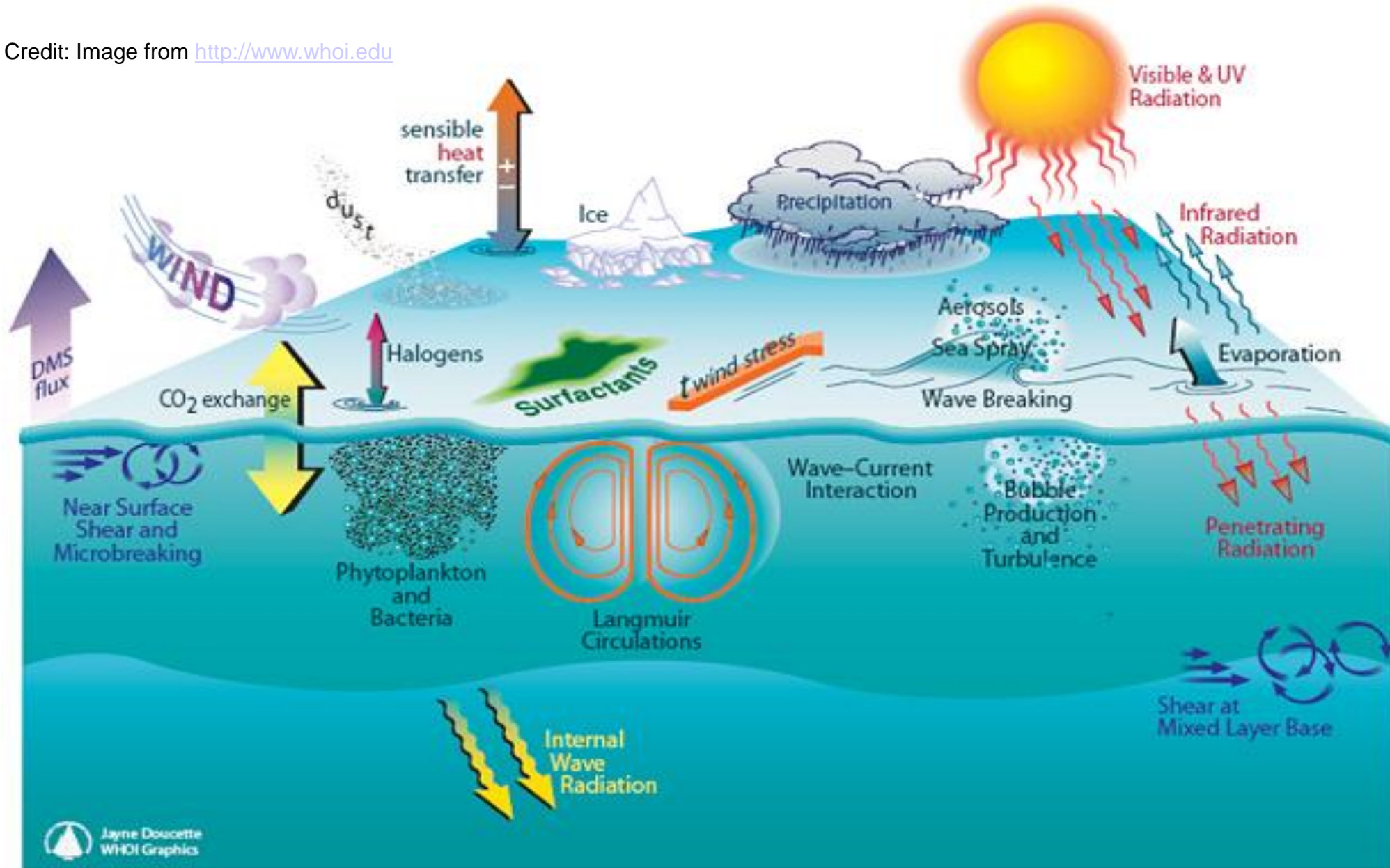
oceanflux ghg

support to science element



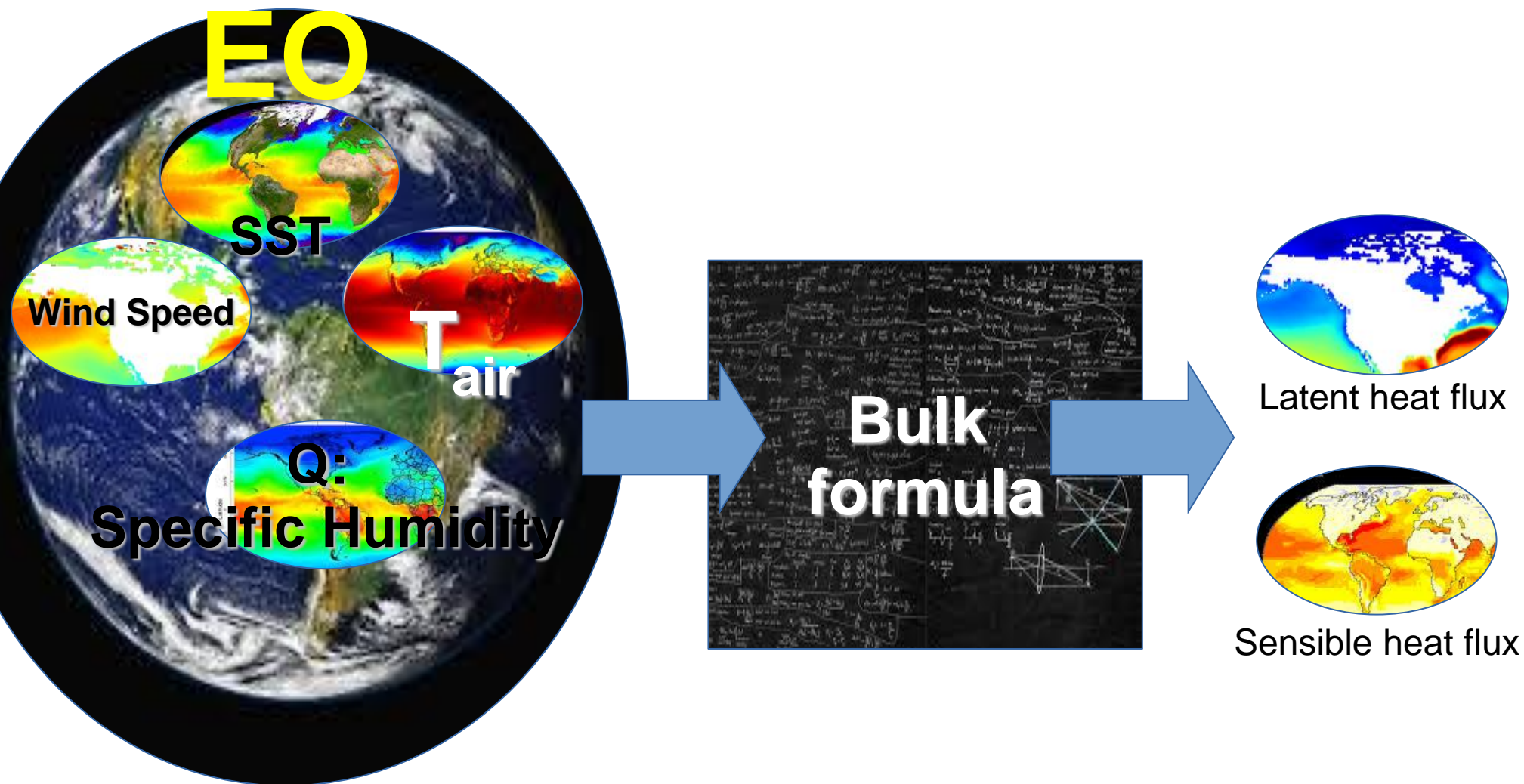
What are air-sea fluxes?

Credit: Image from <http://www.whoi.edu>

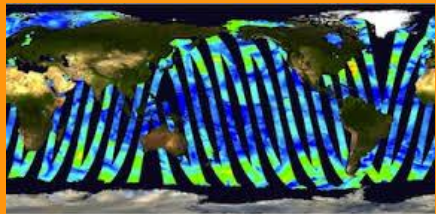


Jayne Doucette
WHOI Graphics

How to compute air-sea fluxes?



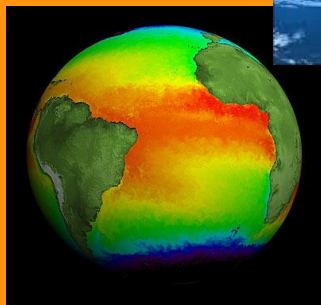
1/6 Data Storage service



AQUA
SMOS
ADEOS
JASON
TOPEX
CryoSat
GFO
AltiKa

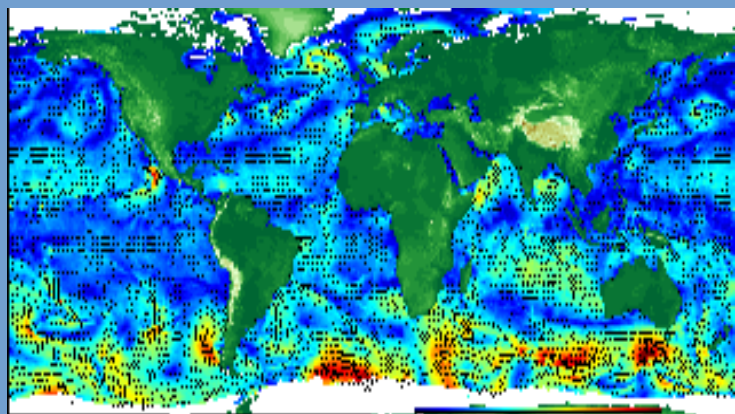


TRMM
QuickSc
at
OceanS
at

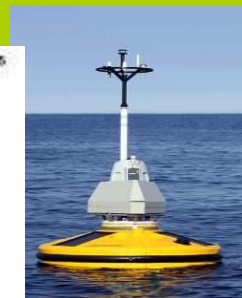
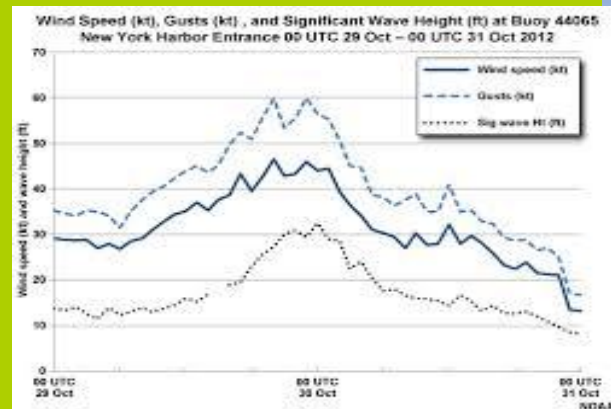


Series METOP
Series NOAA

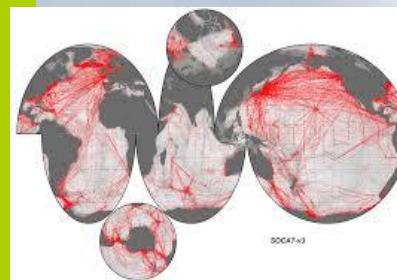
HY2



In-situ

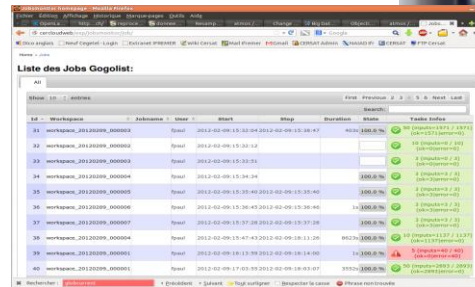


Buoys



2/6 Processing service

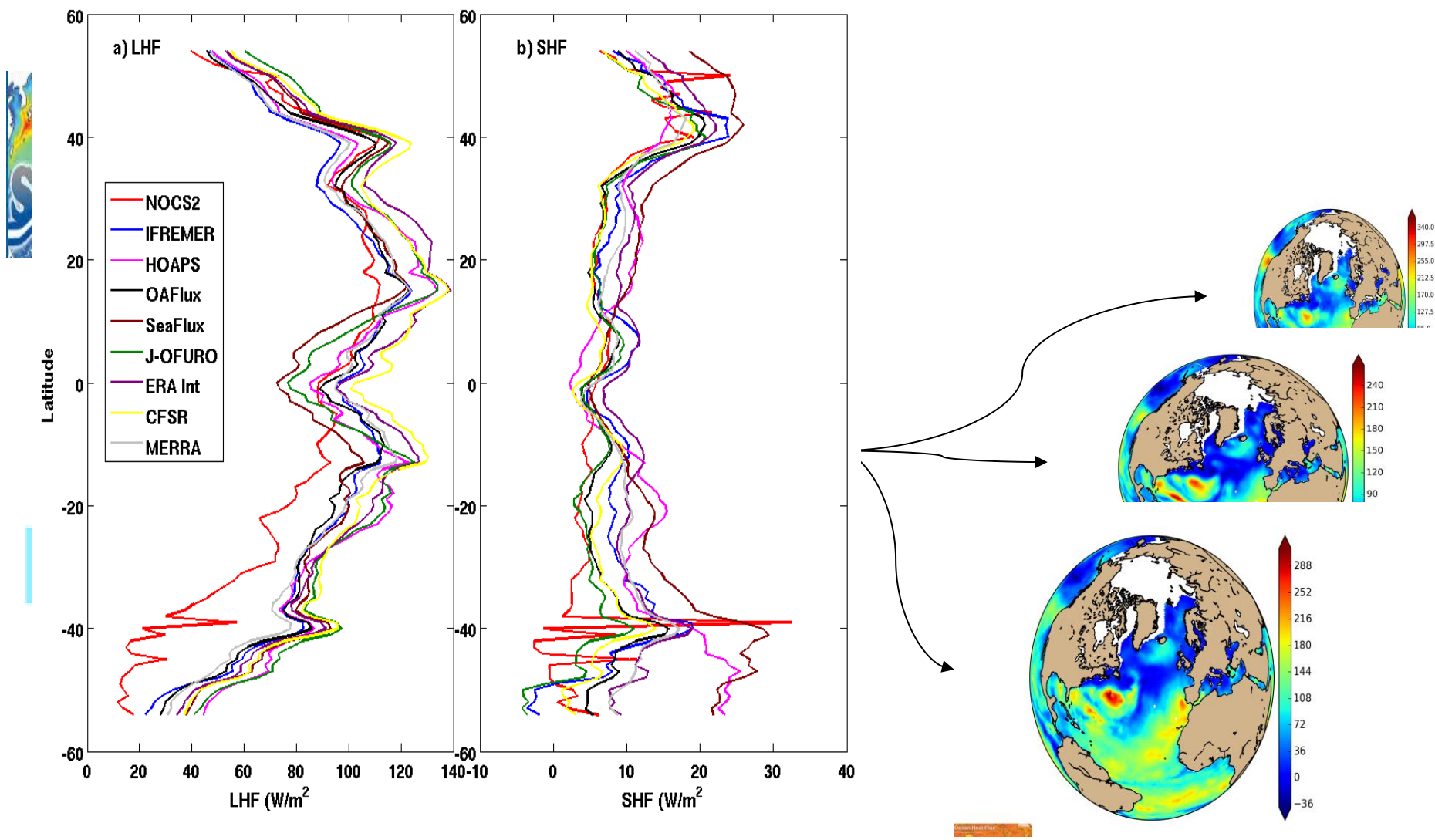
- 600 processing cores
- 2.5 Terabytes memory
- 3.3 Petabytes storage
- House made massive distributed processing tools:
 - Gogolist
 - DataCrunch

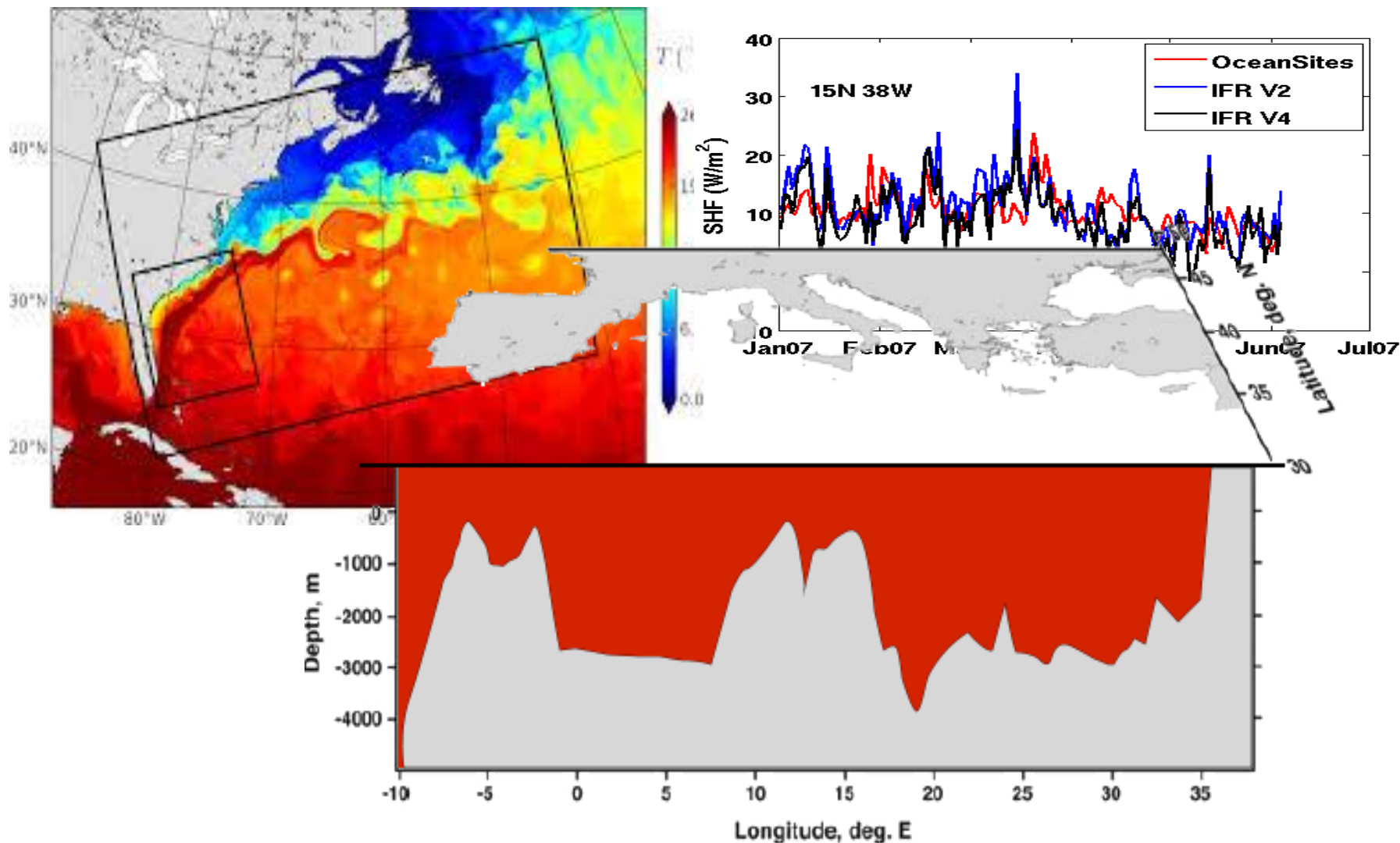
ID	WorkSpace	JobName	Step	Start	Stop	Duration	Status	Yield	Index
31	workSpace_20120309_000004	gogolist	gogolist	2012-03-09 13:30:04	2012-03-09 13:30:47	00:00:43	OK	100.0%	1
32	workSpace_20120309_000004	gogolist	gogolist	2012-03-09 13:30:42			OK	100.0%	2
33	workSpace_20120309_000004	gogolist	gogolist	2012-03-09 13:30:31			OK	100.0%	3
34	workSpace_20120309_000004	gogolist	gogolist	2012-03-09 13:30:24			OK	100.0%	4
35	workSpace_20120309_000005	gogolist	gogolist	2012-03-09 13:30:49	2012-03-09 13:31:40	00:00:51	OK	100.0%	5
36	workSpace_20120309_000005	gogolist	gogolist	2012-03-09 13:30:49	2012-03-09 13:30:49	00:00:00	OK	100.0%	6
37	workSpace_20120309_000007	gogolist	gogolist	2012-03-09 13:31:00	2012-03-09 13:31:30	00:00:30	OK	100.0%	7
38	workSpace_20120309_000004	gogolist	gogolist	2012-03-09 13:30:47	2012-03-09 13:31:30	00:00:43	OK	100.0%	8
39	workSpace_20120309_000005	gogolist	gogolist	2012-03-09 13:31:28	2012-03-09 13:31:30	00:00:02	OK	100.0%	9
40	workSpace_20120309_000005	gogolist	gogolist	2012-03-09 13:31:28	2012-03-09 13:31:47	00:00:19	OK	100.0%	10



3/6 Data Format



4/6 Metrics



5/6 Open source libraries



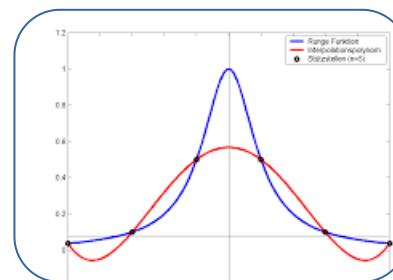
GitLab



Cerplot
=
Drawing lib



Cerberus
=
Data mappers



Cerinterp
=
interpolation

$$\frac{\partial \rho}{\partial t} + \nabla \cdot (\rho \mathbf{u}) = 0, \dots \dots \text{Continuity Eq.}$$

$$\frac{\partial \mathbf{u}}{\partial t} + (\mathbf{u} \cdot \nabla) \mathbf{u} = -\frac{1}{\rho} \nabla p + \mathbf{F} + \frac{\mu}{\rho} \nabla^2 \mathbf{u}, \dots \dots \text{Euler Eq.}$$

$$\rho \left(\frac{\partial \varepsilon}{\partial t} + \mathbf{u} \cdot \nabla \varepsilon \right) - \nabla \cdot (K_H \nabla T) + p \nabla \cdot \mathbf{u} = 0, \dots \dots \text{Energy Eq.}$$

$$\frac{\partial \rho}{\partial t} + \nabla \cdot (\rho \mathbf{u}) = 0, \dots \dots \text{Continuity Eq.}$$

Cerform
=
Scientific toolbox

6/6 Web applications

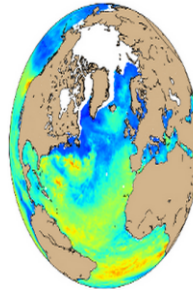
Experiment with OceanFlux data!

Parameterize your own greenhouse gas climatology with the [OceanFlux online configurator](#).

Current features include:

- Guided creation of a configuration to generate your climatology
- Upload of generated config files to your workspace on Ifremer cloud
- Launch online processing from your web browser and get the results via FTP

What for? Start now!



Create your own turbulent flux data-set !

With the present web application, you will build a brand new turbulent flux data-set. It will consist in a daily global (1/4 degree) resolution netCDF4 on the period 1999-2009 containing latent and sensible surface fluxes.

Current features include:

- Guided creation of a configuration to generate your data-set.
- Launch online processing from your web browser and get the results via FTP

What for? Processed configs Start now !

- Relevants configurations
- 14.0 enio@globalwave.com
 - 12.0 antoine.grouazel@ifremer.fr
 - 10.0 loic.druesne@ifremer.fr



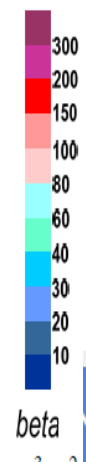
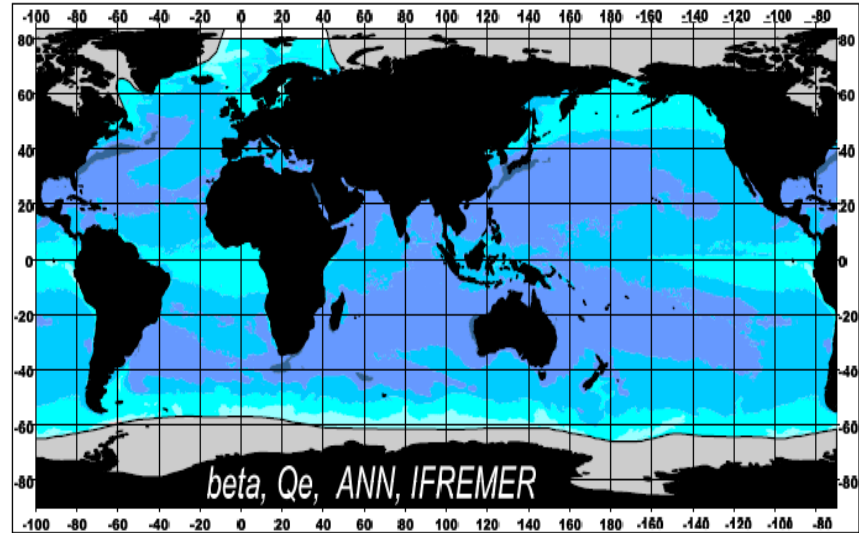
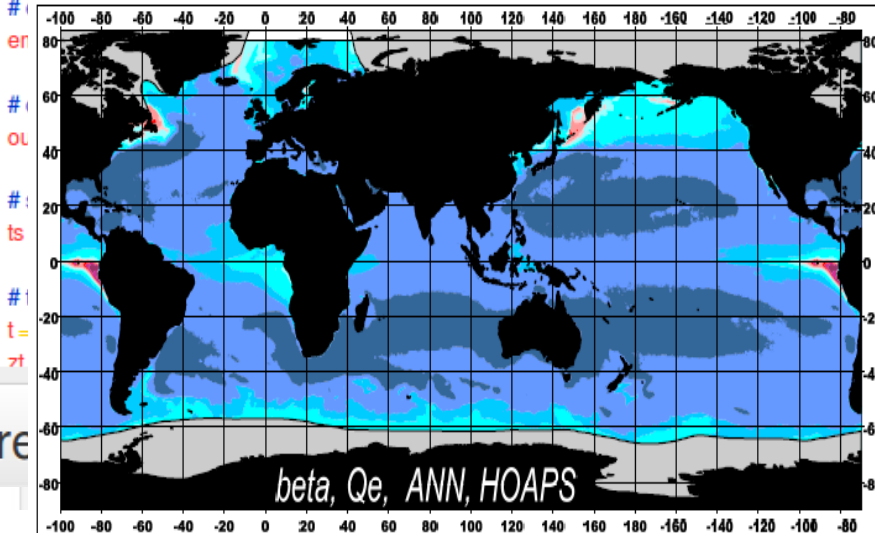
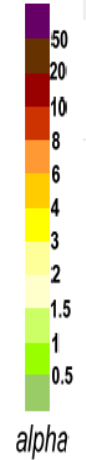
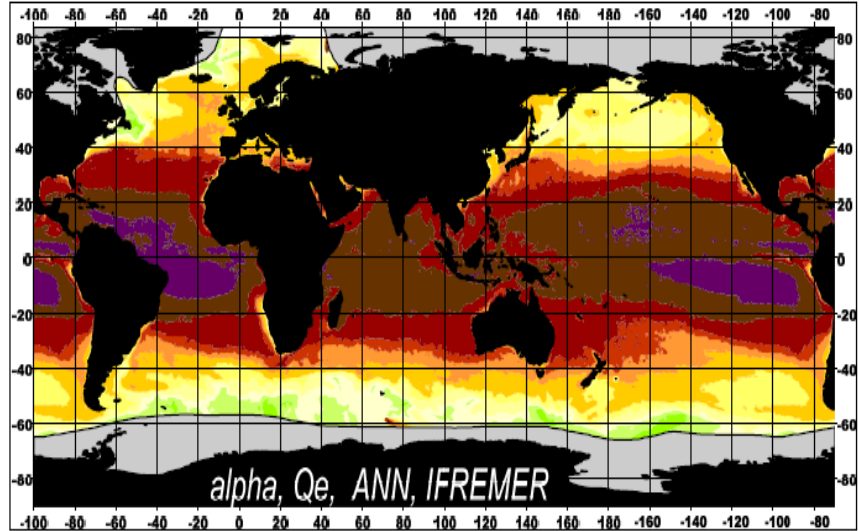
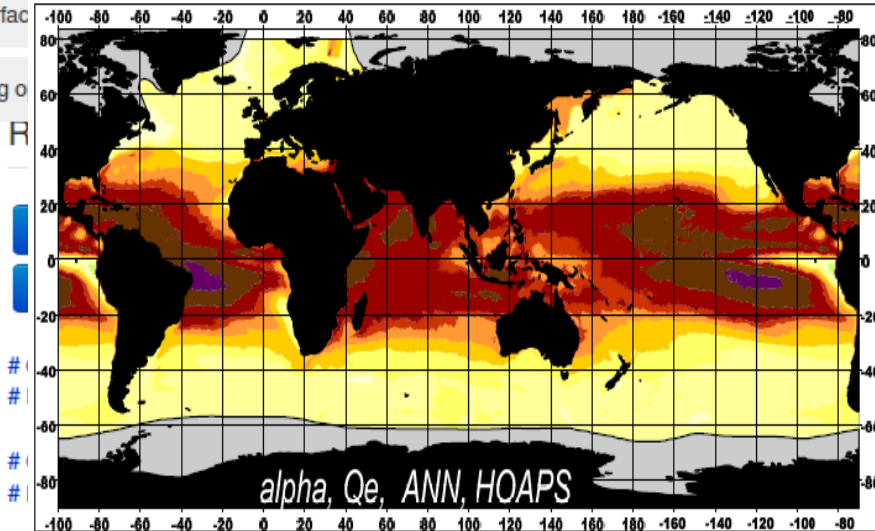
OAFUX DATA STANDARDIZED TO OCEANHEATFLUX FORMAT

OceanHeatFlux [Home](#) [Configuration](#)

- 1 Introduction
- 2 Method
- 3 Temperature Air Above Surface
- 4 Sea Surface Temperature
- 5 Rain
- 6 Surface Current
- 7 Planet Boundary Layer Height

8 Sea Surface

14 Cooling o



$10^{-3} m^2$

Next

Open collaborative research frameworks

