Gelsomina Pappalardo
Chair ESFRI ENV SWG

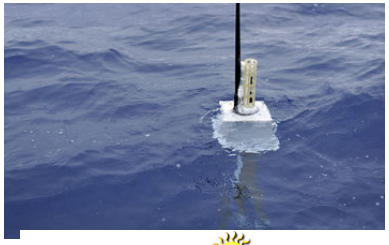
National Research Council of Italy

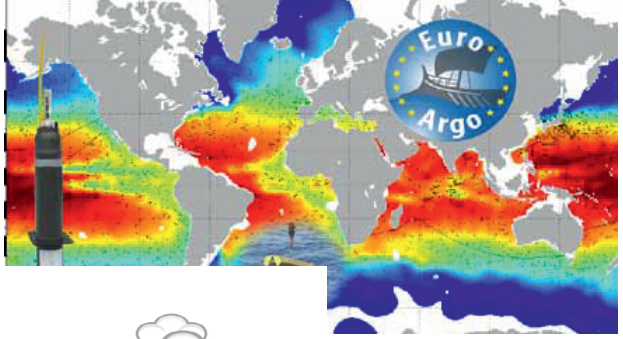
Environmental challenges now and in future



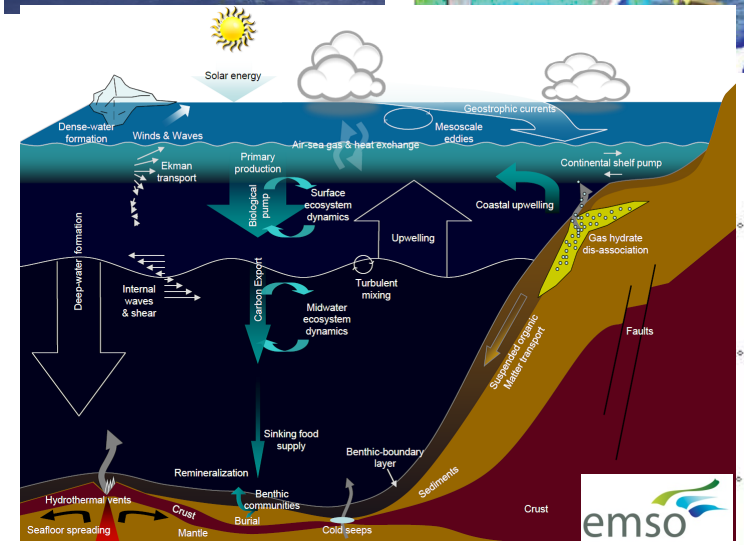
Key role for Environmental Research Infrastructures


ICOS
CO_2 yearly fluxes (2001-2004)
gC m^{-2} yr^{-1}
-500
0
500




Euro
Argo

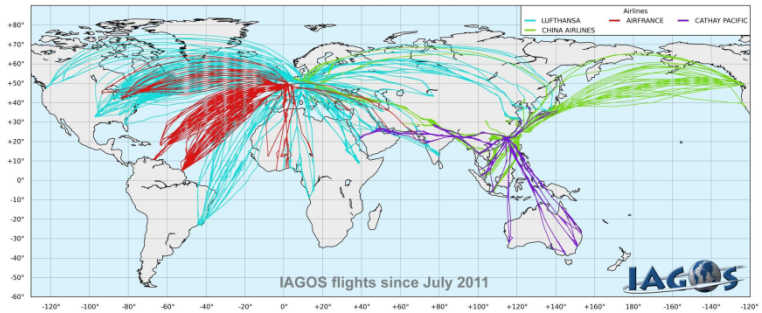

3D
EISCAT


Solar energy
Dense-water formation
Winds & Waves
Ekman transport
Primary production
Air-sea gas & heat exchange
Mesoscale eddies
Geostrophic currents
Continental shelf pump
Biological pump
Surface ecosystem dynamics
Coastal upwelling
Upwelling
Deep-water formation
Internal waves & shear
Carbon Export
Turbulent mixing
Midwater ecosystem dynamics
Gas hydrate dis-association
Faults
Suspended organic Matter transport
Sinking food supply
Remineralization
Benthic-boundary layer
Sediments
Hydrothermal vents
Seafloor spreading
Crust
Mantle
Benthic communities
Burial
Cold seeps
Crust
emso


12°
14°
16°
18°
20°
22°
28°


SIOS


22°
20°
18°
14°
EPOS
EUROPEANPLATEOBSERVINGSYSTEM
2014-03-15 13:


Airlines
LUFTHANSA
AIRFRANCE
CATHAY PACIFIC
CHINA AIRLINES
IAGOS flights since July 2011
IAGOS


LifeWatch

Seas and Oceans are the environment where human activities, natural pressures and legislative/governance aspect show one of the most complex systems which huge potential and vulnerability.

The Arctic region is one of the most challenging scenarios for the timescales of the changes of the environment (and their impact on the socio-economic system) and the complexity of governance to address these challenges.

Sustainable cooperation for a full exploitation of synergies and towards future developments and upgrades

