

INVITED SPEAKERS' ABSTRACTS

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Mesoscale ocean processes in relation to ocean biogeochemistry

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Since the first satellite ocean colour images, it has been apparent that mesoscale ocean processes such as western boundary current meanders, eddies, or Rossby waves, were affecting the primary production of the ocean. This has been studied extensively during the Joint Global Ocean Flux Study (JGOFS) program. Numerical model experiments suggest that the effect of high to very high vertical velocities associated with submesoscale phenomena are important. It also seems that the net yearly primary production is affected by mesoscale phenomena on the basin scale. The impact on the ecosystem and pelagic fishes is also well demonstrated.

As a consequence, estimates of the carbon dioxide uptake in relation with climate variability and global change need to take into account high resolution phenomena, as the latter do change with climate. The forthcoming availability in routine of high resolution models of the ocean circulation, adjusted to *in situ* and satellite data by assimilation techniques, will provide data to estimate carbon fluxes and ecosystem changes on the interannual time scale.