



BIOPSISIS

THE CARBON BIOLOGICAL PUMP - 2 ESSENTIAL SILICIFIED ELEMENTS

In the biogeochemistry of the oceans, the biological pump, which plays a significant role in the marine carbon cycle, is a series of biological processes that result in carbon being transported from the euphotic zone to the ocean depths. The pump is a major element in regulating the climate.

Without the carbon biological pump, the concentration of carbon in the atmosphere would rise by around 50%. The biological pump varies according to primary production, the structure of phytoplankton communities, the flow of particles and the weakening of this flow, which in turn depends on grazing and remineralisation. While diatoms are recognised as forming a phytoplankton group that is essential to the biological pump, several studies show that the role of cyanobacteria has until now been underestimated. Lastly, the discovery that cyanobacteria are capable of storing silicon could, moreover, revolutionise their role in the biological pump.

The BioPSis project proposes to evaluate the role of these essential silicified elements in the biological pump in the context of climate change. To this end, the impact of nutrient limitation, which has been predicted using global circulation models as being a consequence of global changes, will be examined.

Partners

Research centers

MNHN, UMR 7208, Biologie des Organismes et Ecosystèmes Aquatiques (BOREA), Concarneau
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