

Ocean iron and CO₂ interaction studied

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A French study suggested that iron supply changes from deep water to the ocean's surface might have a greater effect on atmospheric CO₂ than thought.

The finding by Stephane Blain and colleagues at the University of the Mediterranean have implications for interpretations of past climate change, as well as future climate predictions.

Iron plays an important role in the carbon cycle because phytoplankton need iron to fix energy into carbon, which is then sequestered in the deep ocean when the microorganisms die and sink. But the exact effect of changes in iron supply on the amount of carbon sequestered remains unclear.

The researchers studied a phytoplankton bloom that occurs in the Southern Ocean and found the ratio of carbon exported to the ocean interior to the amount of iron supplied is at least 10 times higher than previous thought.

The difference occurs because the iron is supplied slowly and continuously and because the bloom is dependent on the supply of major nutrients from below. That indicates such high efficiencies are unlikely to be achieved through artificial "fertilization" of the ocean with iron.

The research appears in the journal *Nature*.

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