



## **Global monitoring of dominant phytoplankton groups in surface waters using SEAWIFS imagery**

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The fate of fixed organic carbon in the ocean strongly varies with the phytoplankton group that makes photosynthesis. The monitoring of phytoplankton groups in the global ocean is thus of primary importance to evaluate and improve ocean carbon models. We have developed an algorithm, called PHYSAT, to identify six different phytoplankton groups from SeaWiFS ocean color measurements. These groups are diatoms, *Prochlorococcus*, *Synechococcus*, haptophytes, *Phaeocystis* and coccolithophorids. Daily global SeaWiFS level-3 data from 1998 to 2004 were processed and the climatology of the dominant phytoplankton groups is presented.

The seasonal cycle is discussed, with particular emphasis on the succession of phytoplankton groups during the North Atlantic spring bloom and on the coexistence of large *Phaeocystis* and diatoms blooms during winter in the Austral Ocean. We also present the inter-annual variability for the 1998-2004 period. The diatoms contribution to the total chlorophyll is highly variable (up to a factor of two) from one year to the other in both Atlantic and Austral Oceans, suggesting a significant variability in organic carbon export by diatoms in these regions. On the opposite, the *Phaeocystis* contribution appears to be less variable in the Austral Ocean.