



Virus -induced plankton dynamic and sea spray oragnics

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The processes that link phytoplankton biomass and productivity to the organic matter enrichment in sea spray aerosol are far from being understood and modelling predictions remain highly uncertain at the moment. While some studies have asserted that the enrichment of OM in sea spray aerosol is independent on marine productivity, others, on the contrary, have shown significant correlation with phytoplankton biomass and productivity (Chl-a retrieved by satellites). Here we show that viral infection of prokaryotes and phytoplankton, by inducing the release of large quantities of surfaceactive organic matter (cell debris, exudates and other colloidal gel-forming material), in part due to cell lysis and plankton defence reactions, and in part from rapid virus multiplication, triggers the organic matter (OM) enrichment in the sea-spray particles during blooms. We show that virus-induced bloom dynamics may explain the contrasting results present in literature on the link between primary productivity and OM sea spray enrichment.