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Marine isoprene production and consumption in the mixed layer of the surface ocean – a field study over two oceanic regions

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Supplement

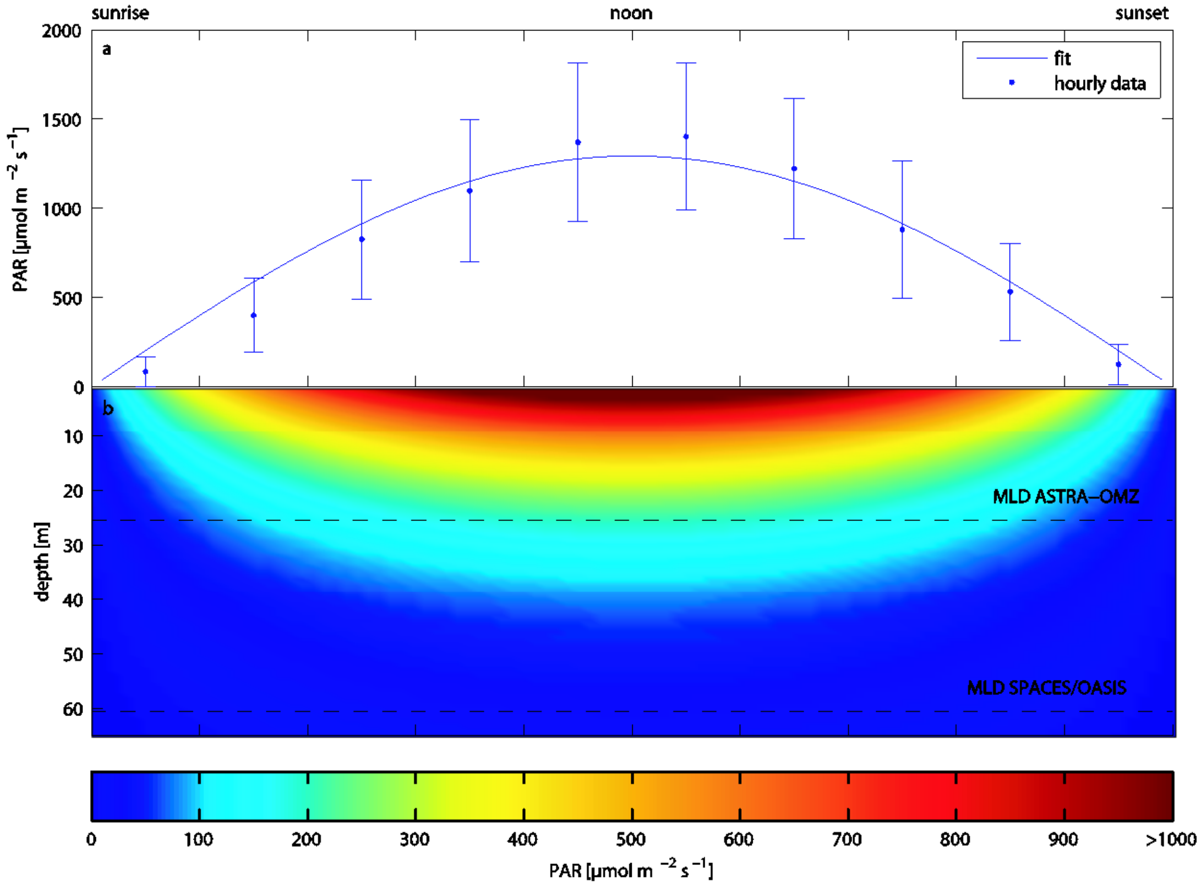


Figure S1: Example for above and in-water radiation. (a) Data points represent hourly radiation measurements (converted from W m^{-2} into photosynthetic active radiation (PAR, µmol m^{-2} s^{-1}) as described in paragraph 2.6) from the ship (mean values ± standard deviation from all cruises), blue line is the fitted data using a sine function. (b) Underwater mean calculated PAR over the course of a day depending on depth by applying the attenuation coefficient K_dPAR and Beer-Lambert's law. Dashed line represents mean mixed layer depth (MLD) for each cruise.

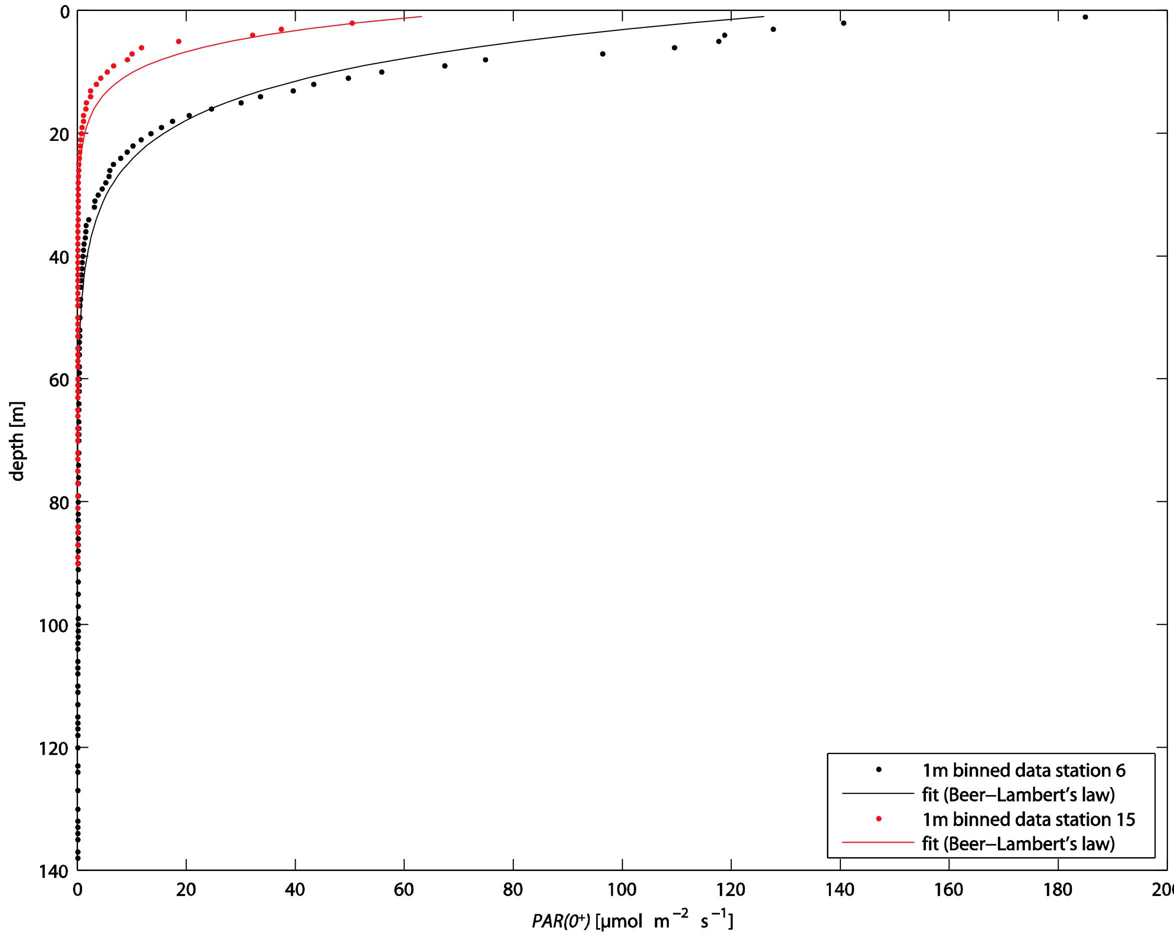


Figure S2: Example of two *PAR(0⁺)* depth profile measurements during ASTRA-OMZ. Data points are 1m binned data of station 6 (black) and station 15 (red). The line is calculated from *PAR(0⁺)* by applying Beer-Lambert's law using a mean attenuation coefficient K_dPAR obtained from all $E_dPAR(0^+)$ depth profile measurements during OASIS and ASTRA-OMZ.

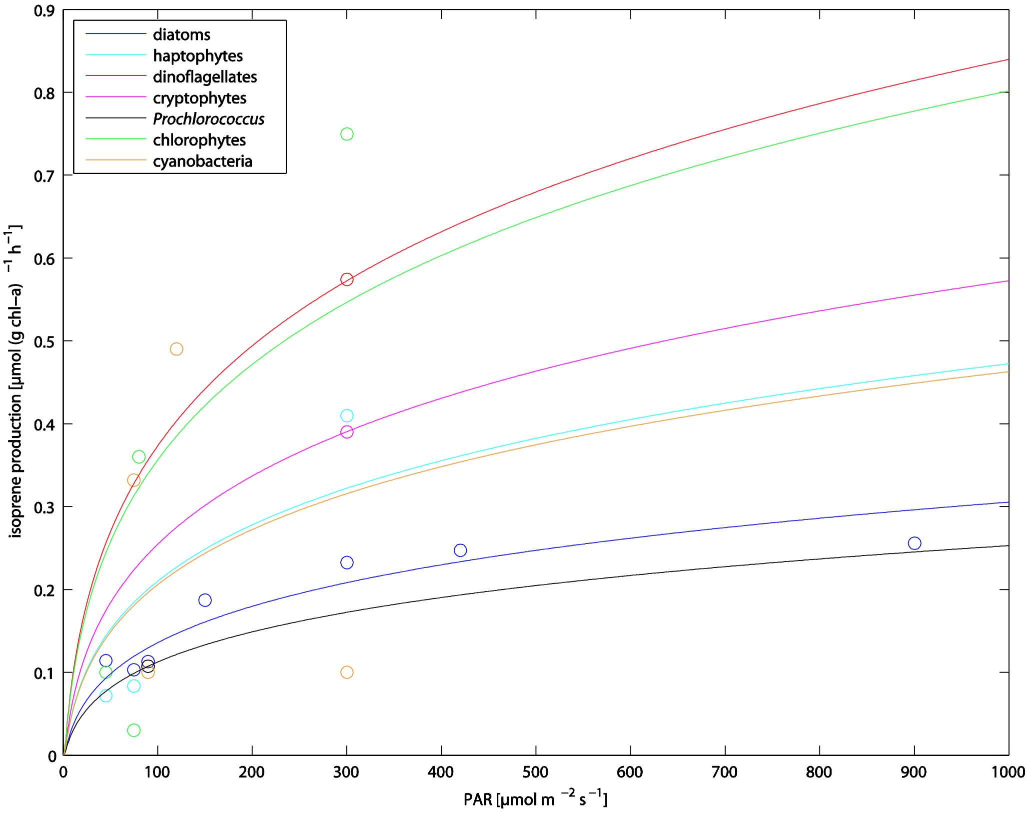


Figure S3: Single literature laboratory chl-a normalized isoprene production rates P_{chloro} (µmol isoprene (g chl-a)$^{-1}$ h^{-1}) (Table 2) as a log squared function of light intensity I (µmol m^{-2} s^{-1}).

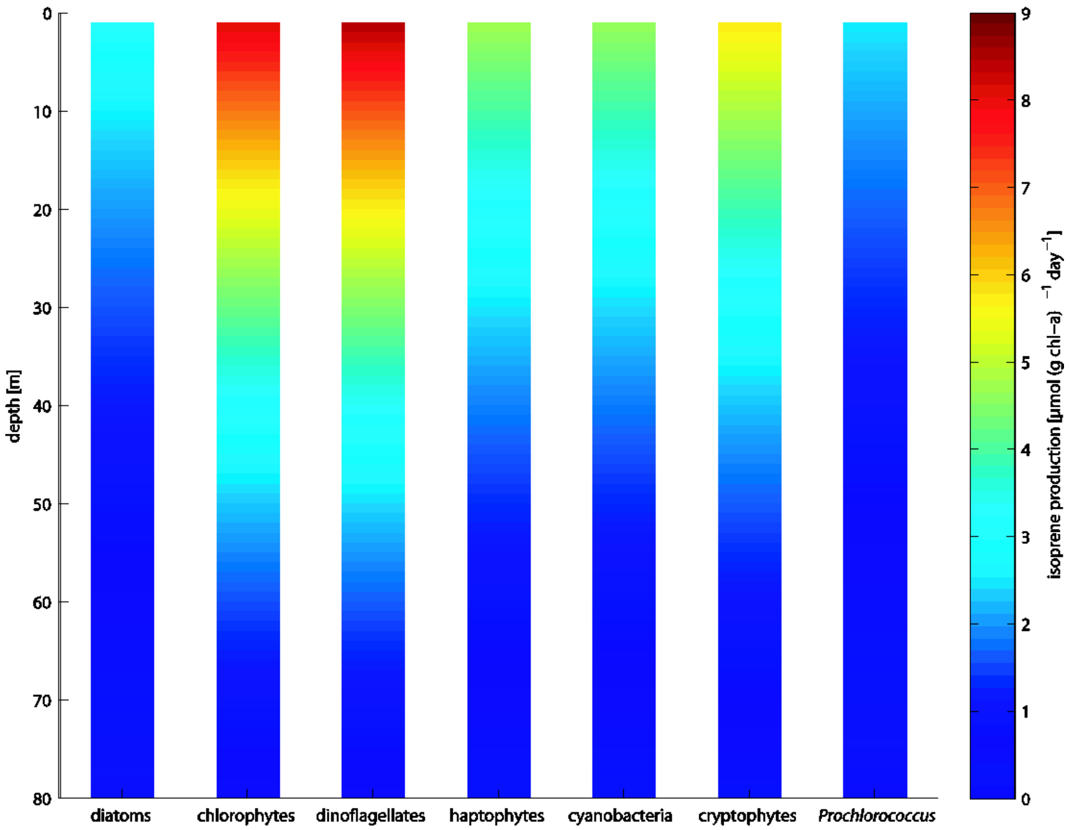
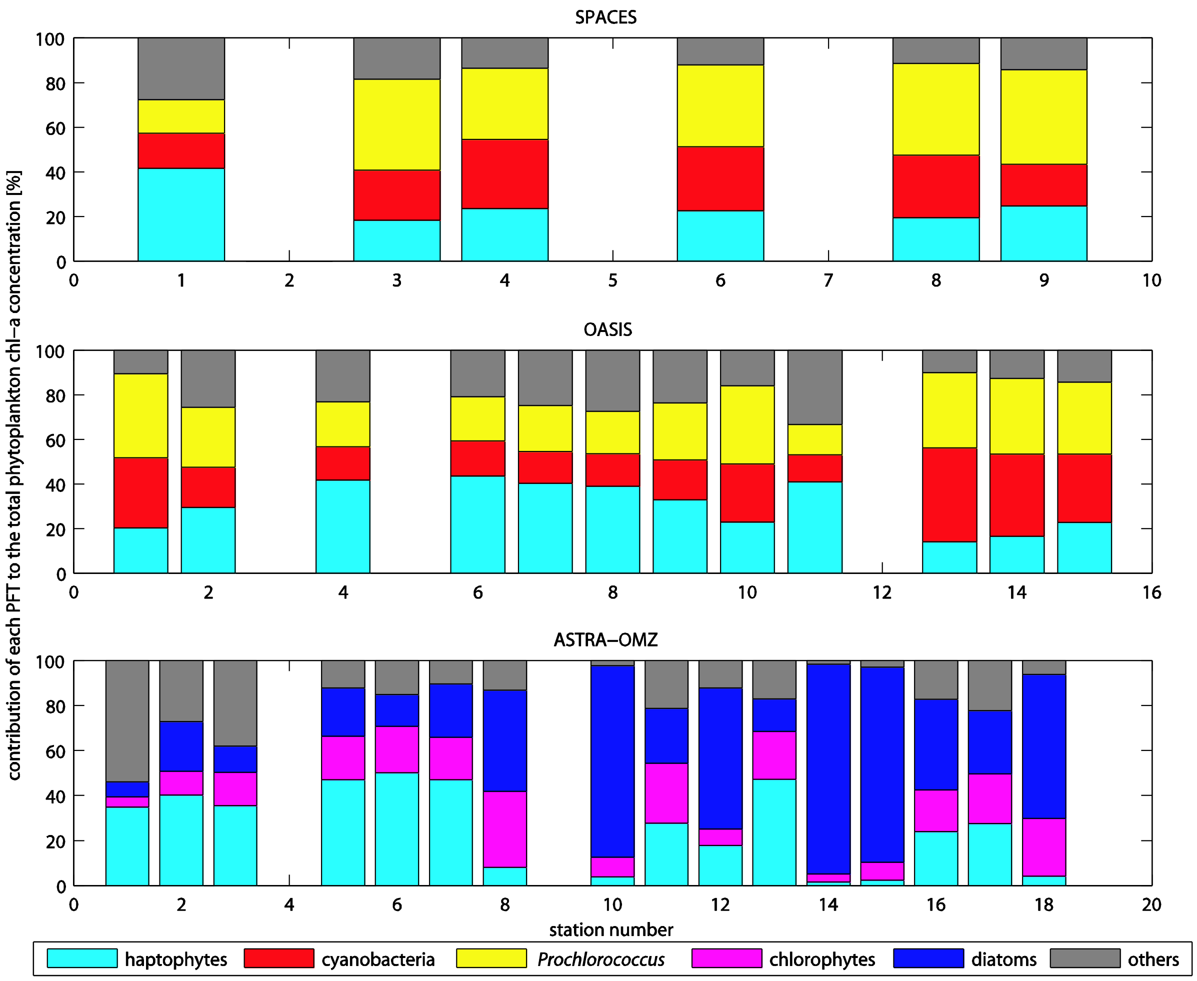


Figure S4: Example of calculated P_{chloro} values (µmol isoprene (g chl-a)$^{-1}$ day^{-1}) for each PFT at station 9 during SPACES depending on the depth in the water column.



25 **Figure S5: Contribution of each of the three most abundant PFTs to the total phytoplankton chl-a concentration at each station during SPACES (upper panel), OASIS (middle panel), and ASTRA-OMZ (bottom panel).**