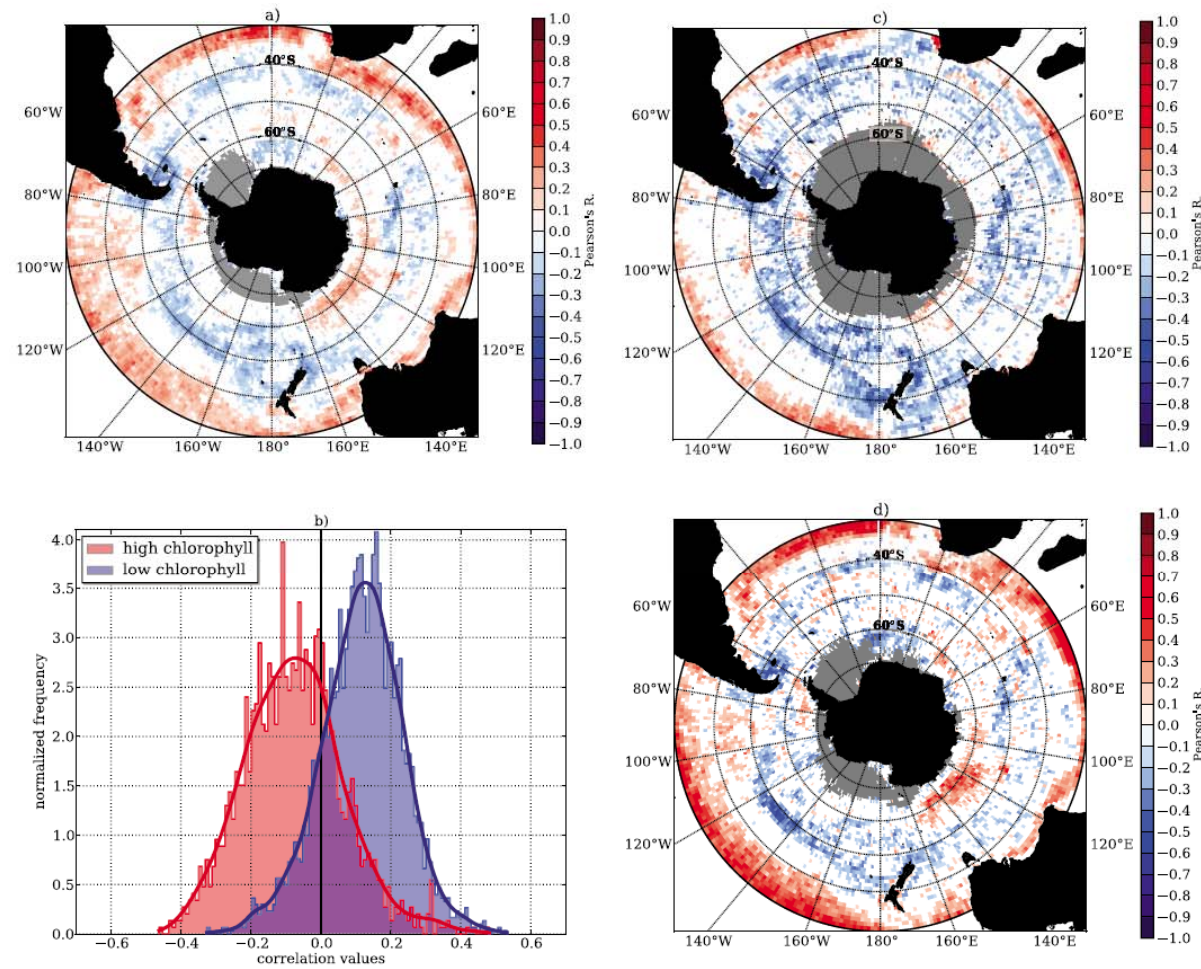


**Fig. 9.** A schematic summarising the response of phytoplankton biomass to the underlying physics of the different seasonal regimes. Regions in blue represent regions of low (<0.25 mg m<sup>-3</sup>) chlorophyll concentration with either high seasonal cycle reproducibility ( $R^2 > 0.4$ ) (Region A, light blue) or low seasonal cycle reproducibility ( $R^2 < 0.4$ ) (Region B, dark blue). Regions in green represent regions of high chlorophyll concentration (>0.25 mg m<sup>-3</sup>) with either high seasonal cycle reproducibility (Region C, dark green) or low seasonal cycle reproducibility (Region D, light green). Mean (1998–2007) frontal positions are shown for the STF (red), the SAF (black), the PF (yellow) and the SACCf (pink).



**Figure 2.** (a) Correlation coefficients between sub-seasonal anomalies of Chl-a and MLD during summer (October–March), regions where the correlation is found insignificant at the 90 percent confidence level ( $p$ -value  $> 0.1$ ) are set to zero and appear in white, gray areas indicate more than  $\frac{3}{4}$  of the values missing. (b) Normalized empirical distribution of the correlation coefficients between Chl-a and MLD for low ( $\leq 0.15 \text{ mg.m}^{-3}$ ) and high ( $\geq 0.5 \text{ mg.m}^{-3}$ ) Chl-a concentration regions, solid red and blue lines are a Kernel Density Estimates. Only regions experiencing a summer (October to March) peak in Chl-a concentrations (i.e., South of the Subtropical Convergence) have been included in the calculation. (c) Same as Figure 2a but for the “onset” phase (12 weeks before the peak Chl-a). (d) Same as Figure 2a but for the “decay” phase (12 weeks after the peak Chl-a).

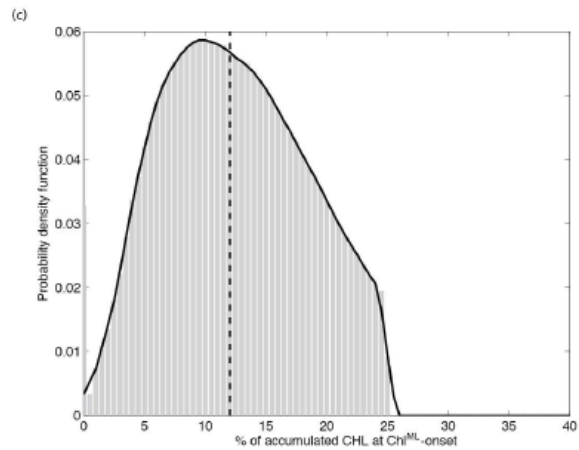
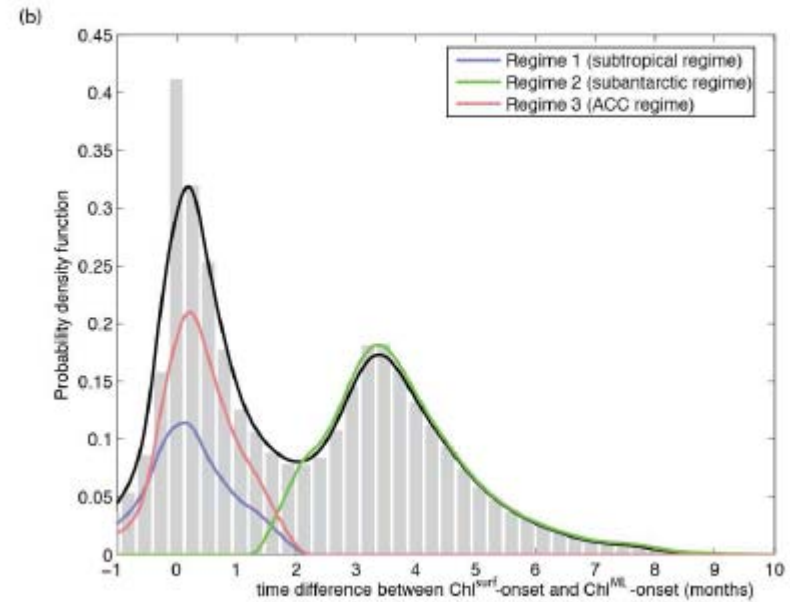
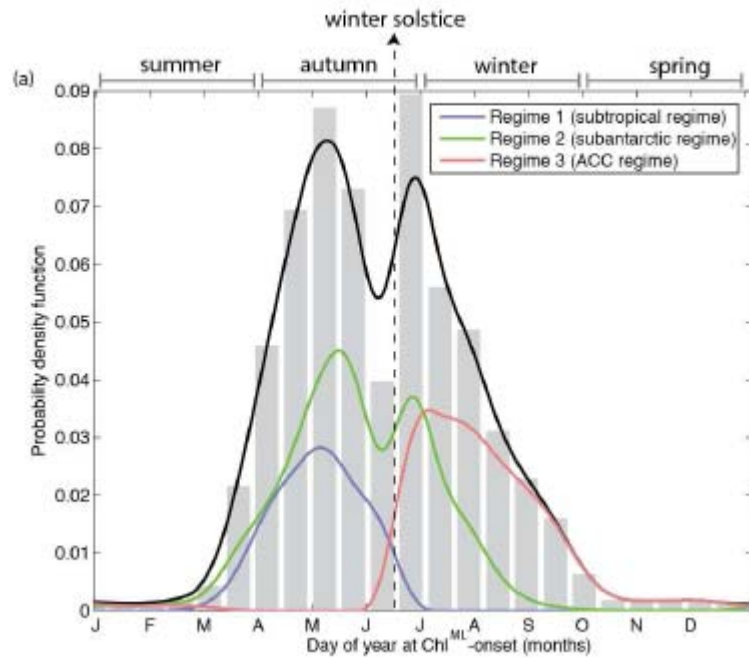
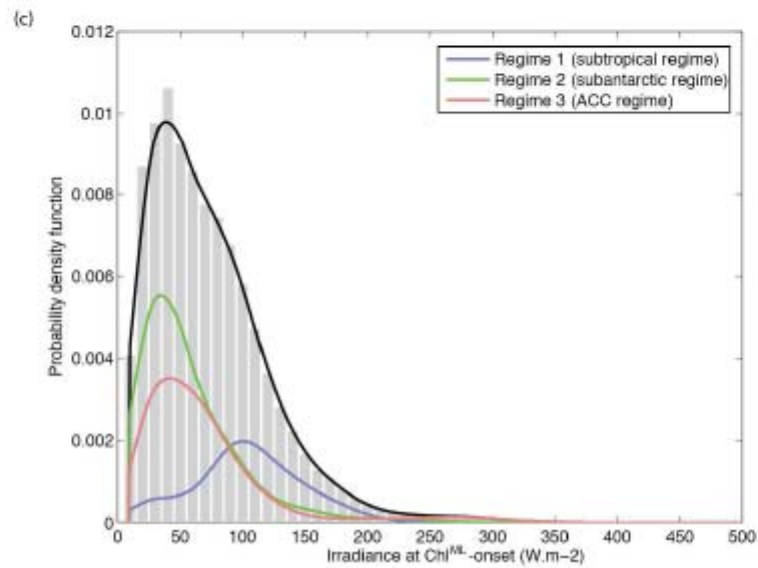
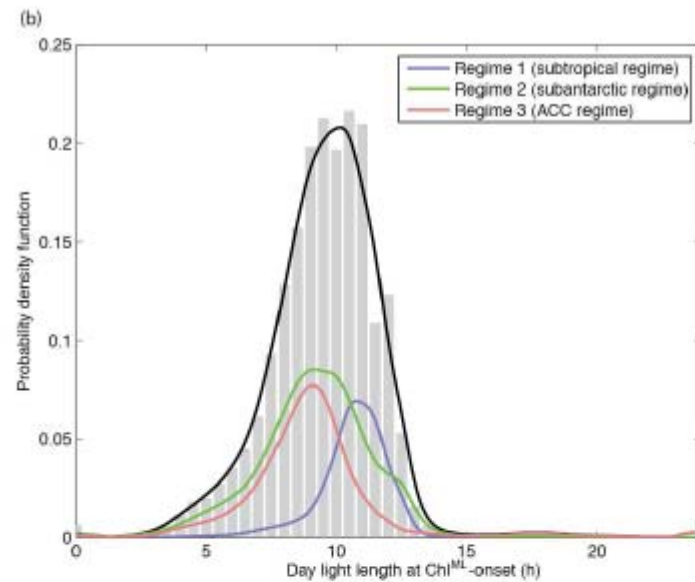
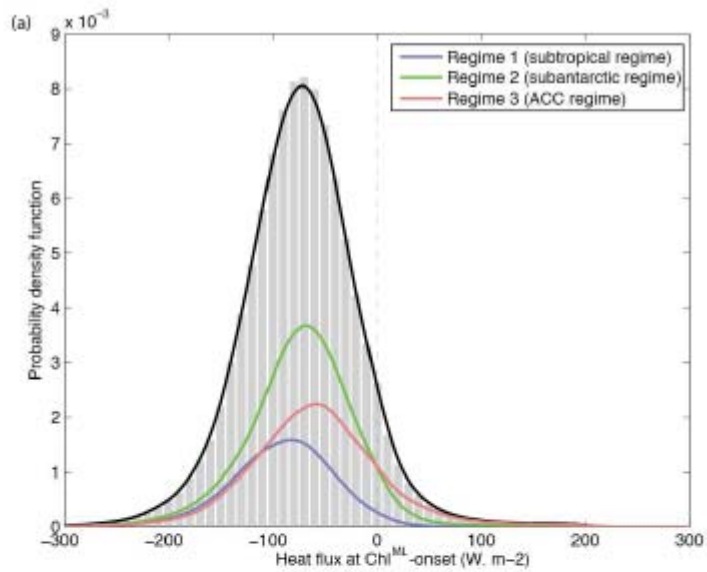
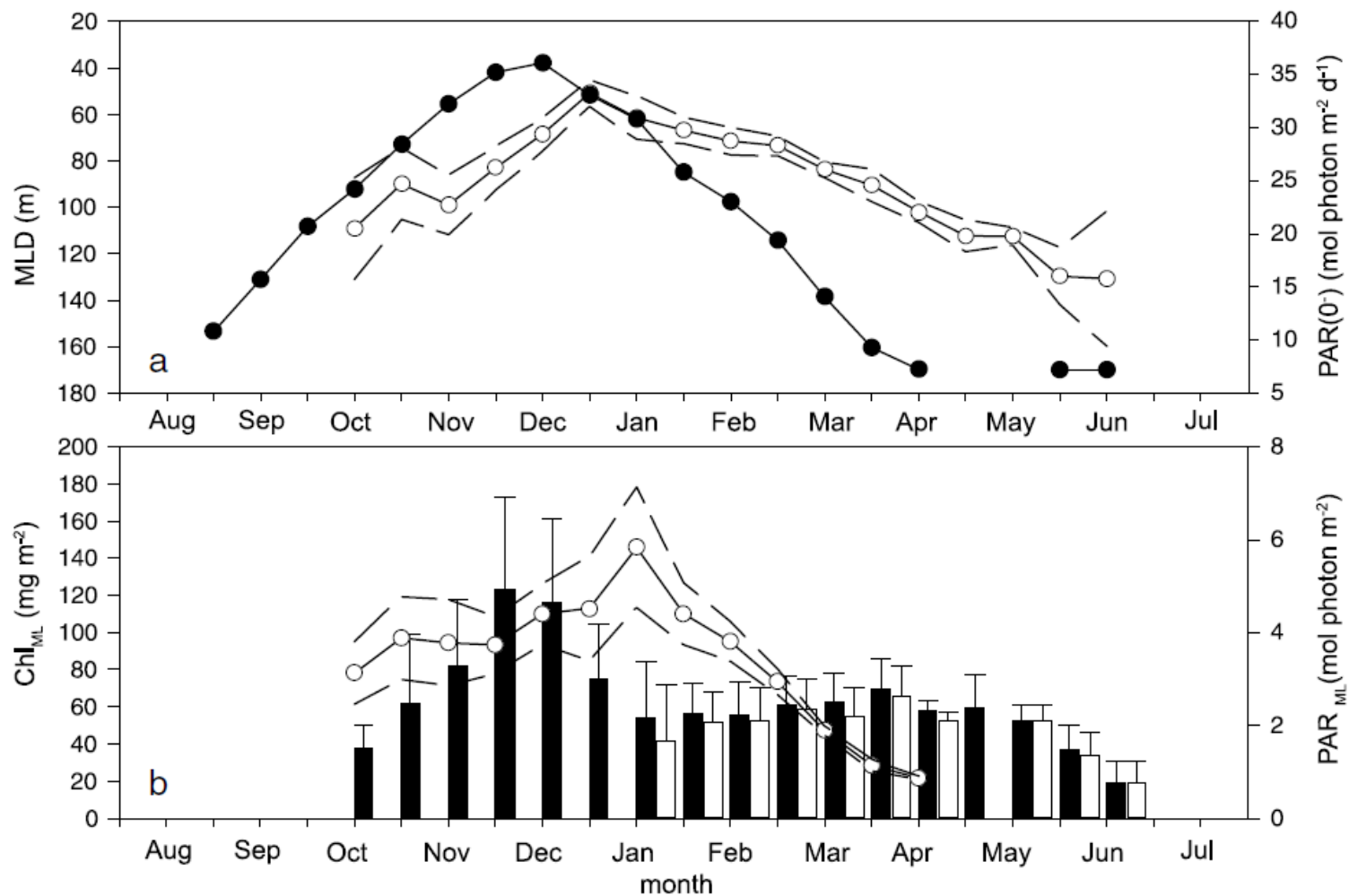


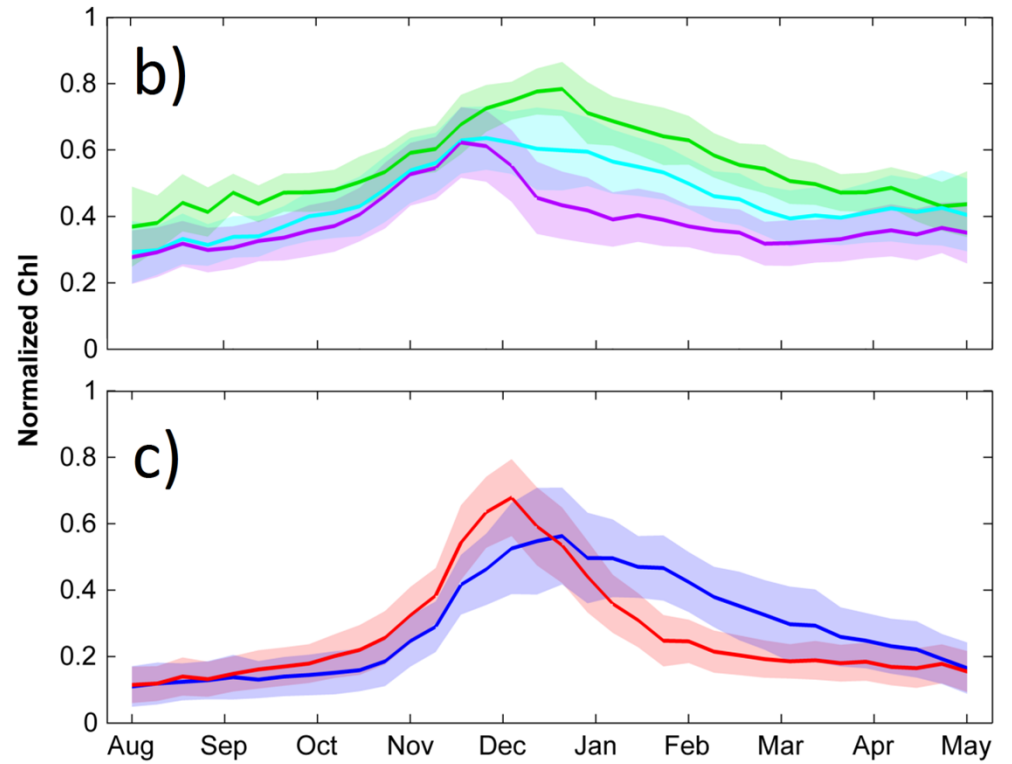
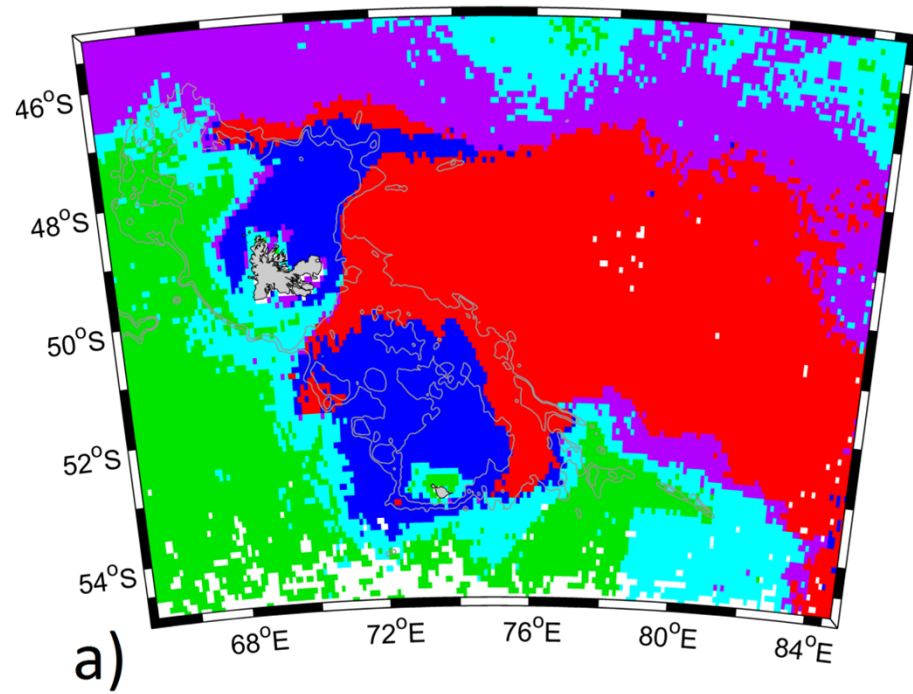
Figure 3: Probability density function (pdf) of the distribution of (a) the day of year of  $\text{Chl}^{\text{ML}}$ -onset; (b) the time difference between  $\text{Chl}^{\text{ML}}$ -onset and  $\text{Chl}^{\text{surf}}$ -onset; and (c) the percentage of accumulated chlorophyll at  $\text{Chl}^{\text{ML}}$ -onset. Gray bar show the pdf of the entire datasets. Smoothed pdf of (black) the entire dataset, and of (blue) regime 1, (green) regime 2, (pink) regime 3 are superimposed on panel (a) and (b). Dashed line in panel (a) refers to the time of winter solstice. Dashed line in panel (c) denotes the median value of the distribution.



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# Typology of blooms around Kerguelen



Mathieu Rembauville