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Supplementary Materials for

Pelagic diatoms communicate through synchronized beacon natural fluorescence signaling

Joan S. Font-Muñoz*, Marc Sourisseau, Amanda Cohen-Sánchez,
Idan Tuval, Gotzon Basterretxea

*Corresponding author. Email: jsfontmu@ifremer.fr

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This PDF file includes:

Figs. S1 to S7

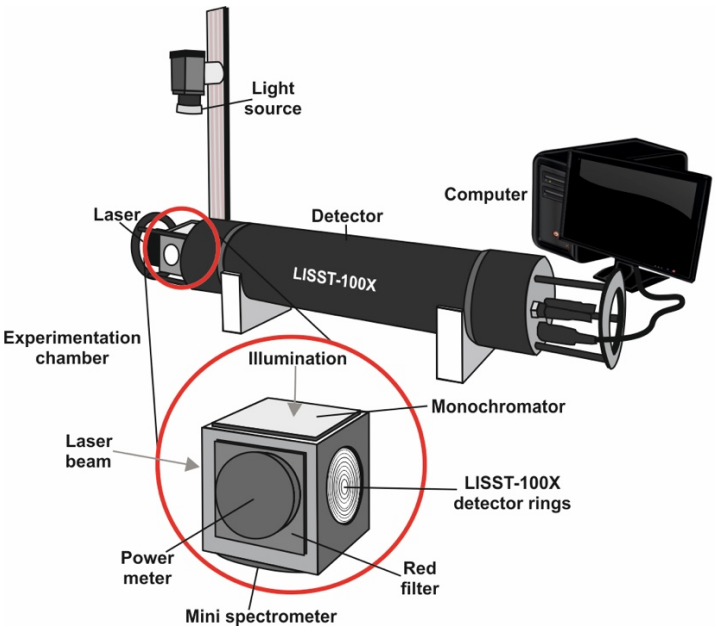

Fig. S1.

Schematic of the experimental set-up. An in-house built chamber incorporating a modulated (spectrally, via a monochromator, and in time) light-line, orthogonal to the laser diffraction axis coupled to a power meter (PM16-130 from Thorlabs) and a Hamamatsu C12666MA mini-spectrometer is inserted in the LISST-100X configured in real-time mode.

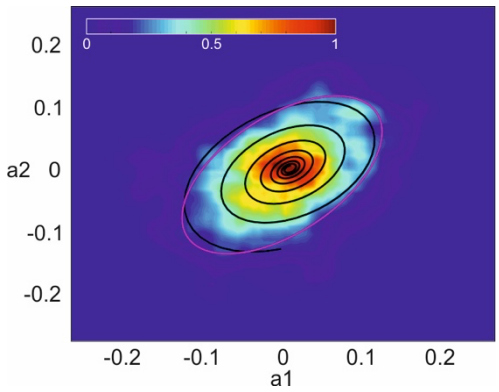

Fig. S2.

Two-dimensional phase space reconstruction for the dynamics of R for experiments carried out with living cells treated with a cytoskeleton motility inhibitor (BDM). The convergence towards the fixed-point attractor is indicated by the black line while the magenta ellipse shows the characteristic limit cycle of living cells.

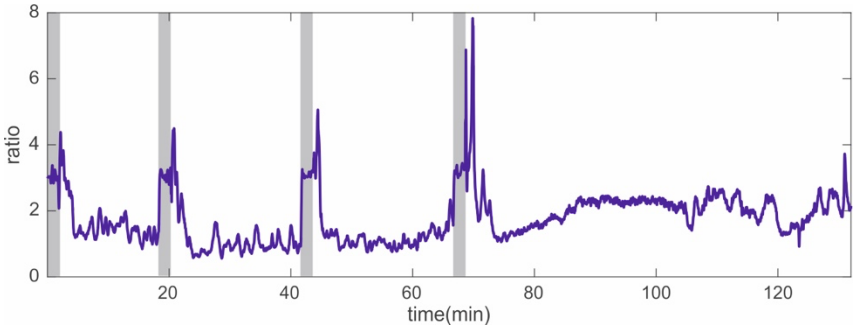

Fig. S3.

Temporal evolution of *R* for living cells with multiple imposed mixing phases. Gray bands indicate the stirring intervals.

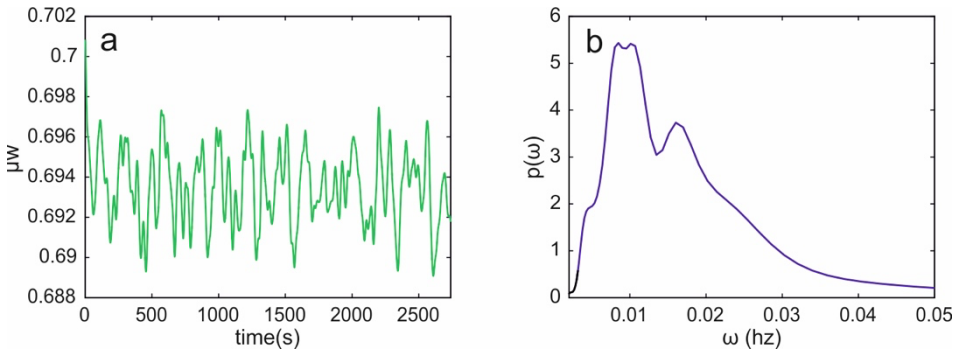

Fig. S4.

(a) Detrended time evolution of the chlorophyll autofluorescence in a suspension of sedimenting *P. delicatissima* and (b) the corresponding power spectrum.

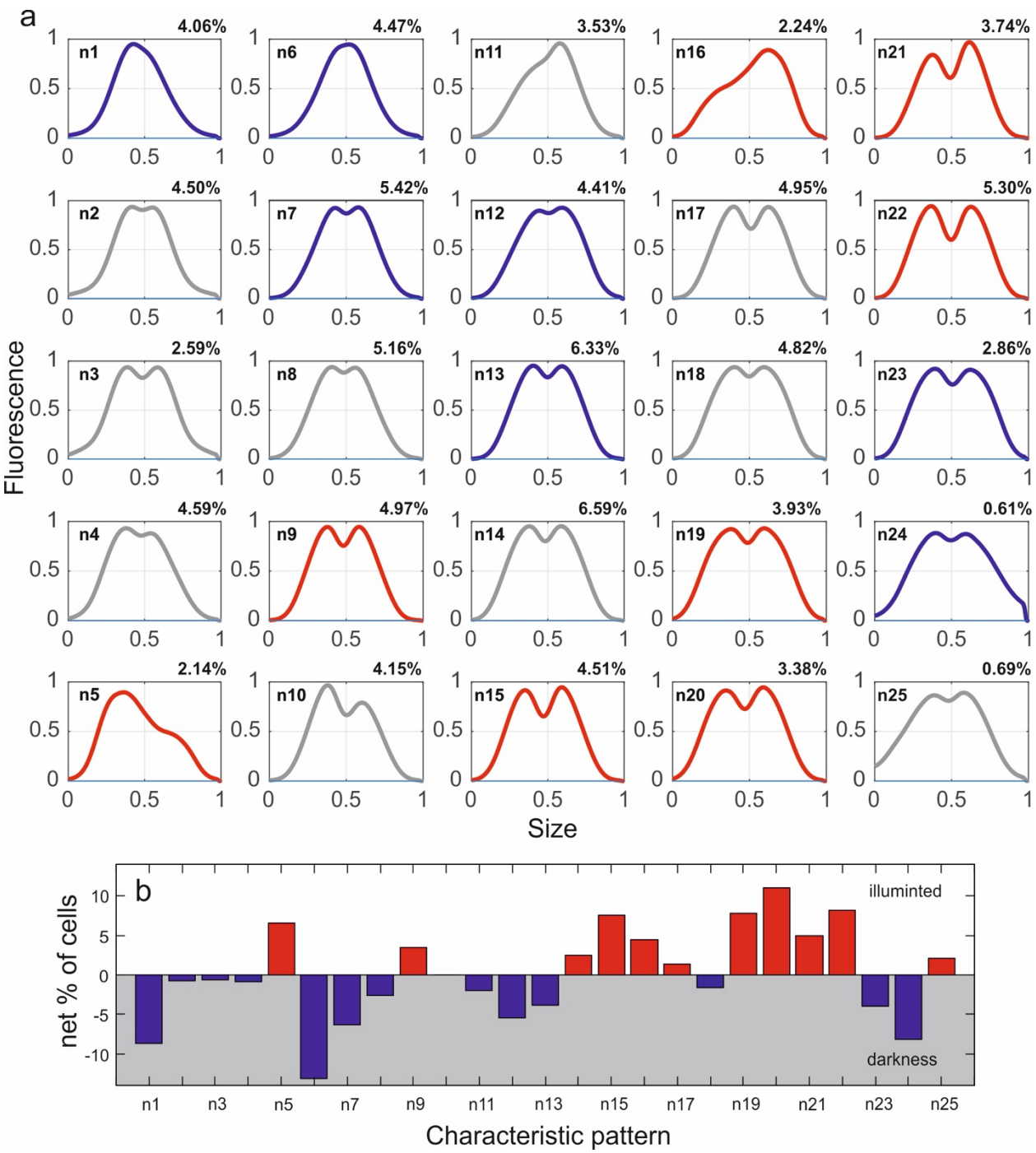

Fig. S5.

(a) Characteristic patterns (n1 to n25) of chloroplasts arrangements (x-axis standardized size, y-axis standardized fluorescence) as obtained from SOM analysis of 20.000 cells. The value on the top right margin of each pattern indicates its probability of occurrence (n=20.000 cells). Red and blue lines indicate net percentages of cells above 3 and below -3 respectively. (b) Net percentage of cells that were illuminated (positive values) compared with those that were in darkness for each characteristic pattern.

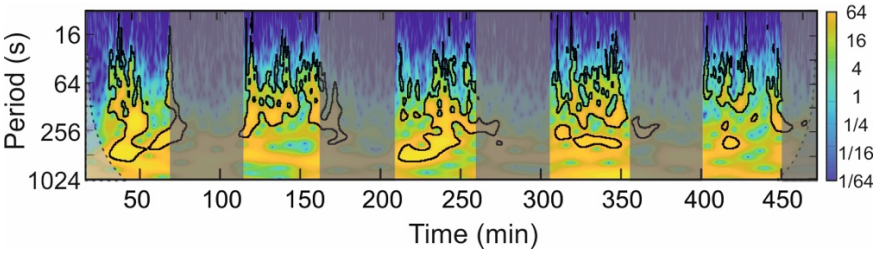

Fig. S6.
Continuous wavelet spectra of the temporal evolution of R for the experiment shown in Fig. 1c. The gray bands indicate periods of darkness. The thick black line is the 95% significance level (obtained using the red noise model) and the dashed line depicts the cone of influence beyond which edge effects become important. Colorbar shows power spectral density.

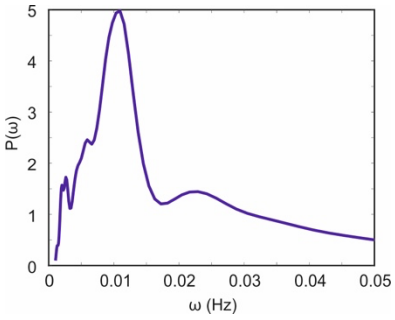

Fig. S7. Power spectrum of R for *P.tricornutum*