

Appendix A SCAMP fluorometer calibration curve

Voltage data from the SCAMP fluorometer can be linearly related to chlorophyll-*a* concentration, once the SCAMP calibration curve is known. This relationship has been produced by comparing voltage and chlorophyll-*a* profiles collected in 2016 from Blagdon Lake, an eutrophic lake located in Blagdon (England) and Llandegfedd Reservoir, an oligotrophic basin in Pontypool (Wales).

Chlorophyll-*a* was measured using a calibrated fluorometer by exciting water with a 470nm blue beam and with a vertical resolution of 30 cm. The sensor was mounted on an EXO3 multi-parameter sonde manufactured by YSI.

Four profiles in four different locations were available from Blagdon lake and one profile from Llandegfedd Reservoir.

Five SCAMP voltage profiles were acquired at the same time in each location with a depth increment of 2 mm. In each site, the five SCAMP profiles have been binned every 30 cm and time-averaged to obtain one profile. From each bin of the voltage and chlorophyll-*a* profiles, the corresponding sampled points have been extracted (starts and circles in Fig. 21). A line was finally fitted to the points to obtain the calibration equation reported in the figure. The coefficient of determination $R^2 = 0.93$ suggests that the correlation was strong.

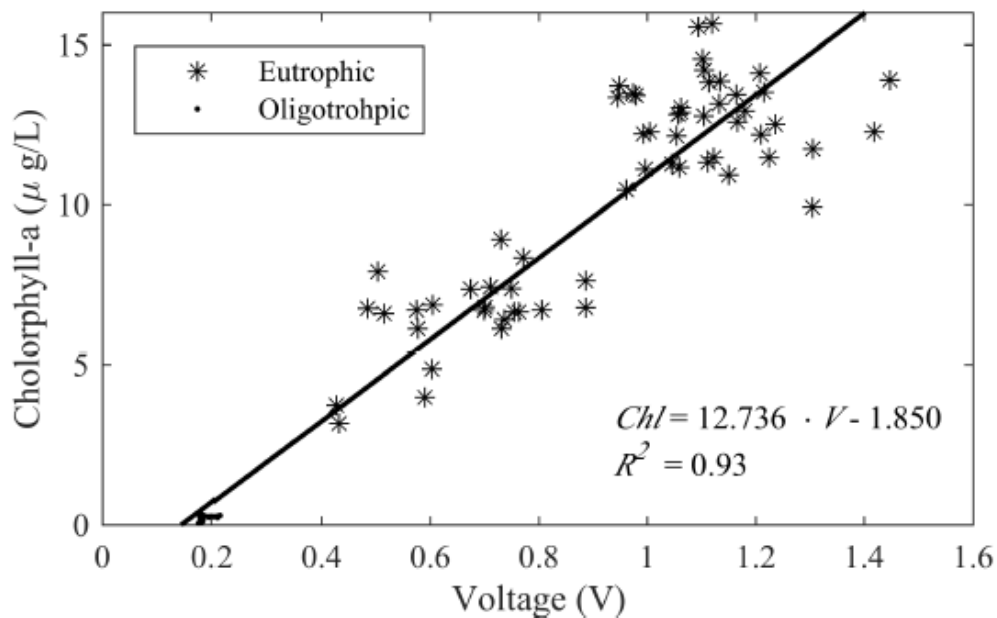


Fig. 21 *In situ* calibration curve used to convert the SCAMP voltage profiles to chlorophyll-*a* concentration.

Stars indicate data from the Blagdon lake, while the circles refer to Llandegfedd Reservoir. The conversion equation is reported in the right-bottom corner of the figure along with the coefficient of determination R^2