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Multi-scale and qualitative analysis of a stoichiometric algae model

Algal blooms are becoming a global concern due to the increasing prevalence of eutrophication. Here we analyze a stoichiometric model for algal dynamics with rich transient behaviour, and the driving biological mechanisms are studied and understood via a multiple time-scale analysis. We further perform global qualitative analysis. Finally, I will briefly mention our recent effort in predicting imminent algal blooms in lakes using incomplete timely data.