Dynamic Flux Balance Analysis Model for *Chlamydomonas reinhardtii* under the Heterotrophic Condition

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Flux balance analysis (FBA) is a tool widely used for predicting the metabolic behavior of a microbial metabolism based on a set of biochemical reactions converted into a mathematical representation of the network. Dynamic FBA (dFBA) models, instead of assuming pseudo-steady state, incorporates dynamic considerations into the FBA and have been developed for diverse species of bacteria like *Escherichia coli*, *Saccharomyces cerevisiae*, *Lactococcus lactis* in order to improve analysis of metabolic networks under time-varying conditions. In this presentation, we discuss a dynamic FBA model of the algae *Chlamydomonas reinhardtii* under the heterotrophic condition. This dynamic FBA model is used to simulate the batch growth subjected to limited carbon substrate by dividing the growth time into several time intervals. Using experiment data for previous values of a state, we attempt to predict the next flux distribution statically. Eventually, the model will be extended to other conditions, e.g., autotrophic and mixotrophic, which include photosynthesis effects.