Stoichiometric Modelling in Biotechnology

Predicting microbial metabolism plays an important role in developing bioprocesses, especially when trying to replace petrochemical processes with bio-processes based on renewable resources. While many aspects of microbial metabolism are still not completely understood (e.g. regulation) or cannot easily be measured in vivo (e.g. kinetics), stoichiometric modelling offers tools to describe the outer boundaries of the physiological solution space. In reality, we might not be able to test those boundaries (regulation, kinetics, toxicity), but they allow us to predict the maximum potential of a bioprocess. In this presentation, I will introduce elementary flux mode analysis and genome scale metabolic modelling as two alternative approaches to study the production potential of microorganisms.

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All interested colleagues are kindly invited.