Optimization Methods in Metabolic Networks
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DESCRIPTION

Provides a tutorial on the computational tools that use mathematical optimization concepts and representations for the curation, analysis and redesign of metabolic networks

• Organizes, for the first time, the fundamentals of mathematical optimization in the context of metabolic network analysis

• Reviews the fundamentals of different classes of optimization problems including LP, MILP, MLP and MINLP

• Explains the most efficient ways of formulating a biological problem using mathematical optimization

• Reviews a variety of relevant problems in metabolic network curation, analysis and redesign with an emphasis on details of optimization formulations

• Provides a detailed treatment of bilevel optimization techniques for computational strain design and other relevant problems