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(Bi)Linear Bilevel Optimization Problems: models, algorithms and applications

Bilevel optimization involves hierarchical problems where a subset of variables represents the optimal solution of a nested, lower-level optimization problem. These models capture scenarios where two decision-makers act sequentially.

This lecture will cover the key concepts, properties, and algorithms for solving bilevel problems, with a focus on cases where the lower level is linear. I will then discuss recent advances that enhance solution approaches.

Time permitting, I will also explore bilevel problems with bilinear objectives, including applications such as Stackelberg games and pricing models.