

Linear Convergence in Bundle Progressive Hedging and its link to Proximal Decomposition

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Progressive Hedging and Proximal Decomposition are popular splitting methods for large-scale stochastic optimization. We present a formal equivalence between Progressive Hedging and Proximal Decomposition when the nonanticipativity constraint is a subspace, as well as a result of linear convergence of their bundle versions under standard error-bound assumptions once an infinite null-step tail appears—a situation for which convergence rates in bundle methods have not been analyzed previously.

Joint work with Felipe Atenas, Claudia Sagastizábal and Mikhail Solodov

Author: MOLFESSIS, Théo (École Polytechnique)

Orateur: MOLFESSIS, Théo (École Polytechnique)

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