

Feasibility Cut Addition

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Example:

Consider the following two-stage stochastic program

$$\begin{aligned} \min & 3x_1 + 2x_2 - E(15y_1 + 12y_2) \\ \text{s.t.} & 3y_1 + 2y_2 \leq x_1 \\ & 2y_1 + 5y_2 \leq x_2 \\ & 0.8\xi_1 \leq y_1 \leq \xi_1 \\ & 0.8\xi_2 \leq y_2 \leq \xi_2 \\ & x, y \geq 0 \end{aligned}$$

with $\xi_1 = 4$ and $\xi_2 = 4$ or 8 , independently, with probability $1/2$ each.

Questions:

- Solve it using the Benders single-cut method.
- Solve it using the Benders multi-cut method.