

In general, Mean-CVaR optimization problem is of the following form:

$$\min_{\substack{\mathbf{w}^T E^{\mathbb{P}}(R)=r, \\ \mathbf{w}^T \mathbf{1}=1}} \min_{\tau} \left(\tau + \frac{1}{\beta} \sum_i p_i (-\mathbf{R}_i \mathbf{w} - \tau)_+ \right). \quad (1)$$

which is equivalent to the following LP:

$$\begin{aligned} \min \quad & \tau + \frac{1}{\beta} \sum_i p_i A_i \\ \text{s.t.} \quad & A_i \geq -\mathbf{R}_i \mathbf{w} - \tau, \\ & E^{\mathbb{P}}(R)^T \mathbf{w} = r, \\ & \mathbf{1}^T \mathbf{w} = 1, \\ & A_i \geq 0, \end{aligned} \quad (2)$$

or

$$\begin{aligned} \min \quad & c && \text{(CVAR)} \\ \text{s.t.} \quad & \tau + \frac{1}{\beta} \sum_i p_i A_i - c \leq 0, && \text{(COST)} \\ & A_i + \mathbf{R}_i \mathbf{w} + \tau \geq 0, && \text{(CV}_i\text{)} \\ & E^{\mathbb{P}}(R)^T \mathbf{w} = r, && \text{(RETURN)} \\ & \mathbf{1}^T \mathbf{w} = 1, && \text{(TOTALWEIGHT)} \\ & A_i \geq 0, \end{aligned} \quad (3)$$

and the decision variables are explanatory in the file.