

$$\min_{x_i, i \leq n} \left(\frac{g_1(x) + g_2(x)}{g_3(x) + g_4(x)} - \text{calib} \right)^2$$

with $x = (x_i, 1 \leq i \leq n)$ and functions $0 \leq g_p(x) \leq a_p, 1 \leq p \leq 4$, subject to $0 \leq x_i \leq 1, x_i \in R, 1 \leq i \leq n$

reformulated as Problem(P') with auxiliary variables $(x_{n+p}, 1 \leq p \leq 4)$ as

$$\min_{x_i, i \leq n+4} \left(\frac{x_{n+1} + x_{n+2}}{x_{n+3} + x_{n+4}} - \text{calib} \right)^2 \quad \text{subject to}$$

$$0 \leq x_i \leq 1, x_i \in R, 1 \leq i \leq n \quad \text{and}$$

$$0 \leq x_{n+p} \leq a_p, 1 \leq p \leq 4$$

$$g_p(x) - x_{n+p} = 0, 1 \leq p \leq 4$$