Inverse optimization

Dis ·*count*

Dec 2019

$$\begin{aligned} \sum_{i=1}^{m}(e_{ij} - fij + aij)y_i &= c_j \\ \sum_{j=1}^{n}(e_{ij} - fij + aij)x_j^0 &\geq b_i \\ \sum_{i=1}^{m} b_i y_i &\leq v_0 \end{aligned} \tag{1}$$

$$T(e,f,y) = \min \sum_i \sum_j (e_{ij} + f_{ij}) + \sum_{j=1}^{n} \lambda_j g_j(e) + \sum_{i=1}^{m} \mu_i f_i(e) \tag{2}$$

$$g_j(e,f,y) = \sum_{i=1}^{m}(e_{ij} - f_{ij} + a_{ij})y_i - c_j = 0 \tag{3}$$

$$f_i(e,f,y) = b_i - \sum_{j=1}^{n}(e_{ij} - f_{ij} + a_{ij})x_j^0 \leq 0 \tag{4}$$

$$h(y) = \sum_{i=1}^{m} b_i y_i - v_0 \tag{5}$$

$$K(e,f) = e_{ij} f_{ij} \tag{6}$$

$$M(e) = -e_{ij} \tag{7}$$

$$N(f) = -f_{ij} \tag{8}$$

$$\begin{aligned} V_j &= v_j & X_i &= x_i - q_i x_j & &= u_j + \sum_{i \neq j} q_i \\ V_i &= v_i - q_i v_j & X_j &= x_j & U_i &= u_i \end{aligned} \tag{9}$$