Beta minimization - Linear model

November 1, 2022

$$min \sum_{n=1}^{N} 0.5e_{1j} + 0.5e_{2j} \tag{1}$$

subject to:

$y_j = \alpha + \beta_1 x_{1j} + \beta_2 x_{2j} + \beta_3 x_{3j} + \beta_4 x_{4j} + \beta_5 x_{5j} + \beta_6 x_{6j} + \beta_{7j} + \beta_8 x_{8j} + e_{1j} + e_{2j} \qquad \forall j = 1, ..., N$

$e_j = e_{1j} + e_{2j} \qquad \forall j = 1, ..., N$

$\beta_1 \geq 0$

$\beta_2 \geq 0$

$\beta_3 \geq 0$

$\beta_4 \geq 0$

$\beta_5 \geq 0$

$\beta_6 \geq 0$

$\beta_7 \geq 0$

$\beta_8 \geq 0$

$where$:

$\tau = 0.5$

$N = \{1...128\}$

N represents the model instances