
Mixed-integer linear programming model (MILP)

n number of teams

x_{ijt} 1 if at period t , team i is away to team j 's home.

z_{it} 1 if a break occurs at period t

$$\text{Minimize } \sum_{i=1}^n \sum_{t=2}^{n-1} z_{it} \quad (1)$$

$$\text{s.t. } \sum_{i=1}^n (x_{ijt} + x_{jit}) = 1 \quad \forall j = 1, \dots, n, t = 1, \dots, n-1; \quad (2)$$

$$\sum_{t=1}^{n-1} (x_{ijt} + x_{jit}) = 1 \quad \forall i \neq j; \quad (3)$$

$$\sum_{j=1}^n x_{ijt-1} + \sum_{j=1}^n x_{ijt} - z_{it} \leq 1 \quad \forall i = 1, \dots, n, t = 2, \dots, n-1; \quad (4)$$

$$\sum_{j=1}^n x_{jit-1} + \sum_{j=1}^n x_{jit} - z_{it} \leq 1 \quad \forall i = 1, \dots, n, t = 2, \dots, n-1; \quad (5)$$

rewrite by Carter 17/8/14