

Subject to:

$$\sum_{v \in V} X_{vu}^i - \sum_{v \in V} X_{uv}^i \leq \begin{cases} -R_i & u = s_i \\ 0 & else \end{cases} \quad \forall i, \forall u \in V \setminus d_i \quad (1)$$

$$\sum_{v: v \in J} X_{uv}^i \leq \alpha_u^i R_{uJ} \quad \forall i, \forall u \in V \setminus d_i, \forall (u, J) \quad (2)$$