Notation and Abbreviations

Notation

b_i Capacity associated to potential plant location $i \in I$.

$c_{t_1 t_2}$ Traveling cost for going from t_1 to t_2, where $t_1, t_2 \in I \cup J$, not both in I.

d_j Demand of customer $j \in J$.

f_i Fixed opening cost associated to potential plant location $i \in I$.

p Probability that a given customer has demand.

I Set of potential plant locations.

J Set of customers.

P Penalty paid when a customer with demand is not served.

ξ_j Random variable indicating the presence of customer $j \in J$ as a demand point.

$\mathbb{E}_\omega$ Mathematical expectation with respect to the random variable ω.

$\mathbb{P}$ Probability of a general event.

$\mathcal{Q}$ Recourse function. (Expected cost of the recourse action)

$(expr)^+$ Positive part. It is the maximum between $expr$ and 0.

Abbreviations

ATSP Asymmetric Traveling Salesman Problem

CG Column Generation

CO Combinatorial Optimization

CPLP Capacitated Plant Location Problem

ESPPRC Elementary Shortest Path problem with Resource Constraints

GAP Generalized Assignment Problem

KCPTP Knapsack Constraint Profitable Tour Problem

KP Knapsack Problem

LP Linear Programming

LRP Location-Routing Problem

LS Local Search

OR Operations Research

PTSP Probabilistic Traveling Salesman Problem

SLRP Stochastic Location Routing Problem

SSCPLP Single Source Capacitated Plant Location Problem

TS Tabu search

TSP Traveling Salesman Problem

UFLP Uncapacitated Facility Location Problem

VRP Vehicle Routing Problem

List of Figures

List of Tables

List of Algorithms