Highlights

Distribution fast Charging Network Planning at City Scale Using Multi-Policy Deep Reinforcement Learning with Geospatial Analysis

- Research highlight 1
- Research highlight 2

Distribution fast Charging Network Planning at City Scale Using Multi-Policy Deep Reinforcement Learning with Geospatial Analysis

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Abstract

Abstract text.

Keywords:

1. Paper Outline

1. Provide a concise explanation of the background behind the dissemination of fast charging station (one paragraph) Importance of transition from internal combustion engine vehicles (ICEVs) to electric vehicles (EVs) -> Strong positive correlation between the adoption of EVs and the dissemination of fast charging stations.
-> The installation of fast charging stations is quite expensive. It is important to present the charging network planning.
-> EVs do not emit GHGs while driving but EVs still create in the process of charging the vehicles by electricity resources. Thus, present the necessity of the transition of electricity resources into alternative resources (e.g., solar energy) by micro-grid concept for zero-emissions.
-> * Thus, propose a necessity of the fast charging network planning connecting with alternative resources.

2. Present a **distribution** fast charging network planning at a city scale considering **multi-objective**. Previous studies have conducted to investigate the charging infrastructure planning or optimal site selection of charging stations using various planning approaches, such as corridor-level planning (along with main roads and highways that facilitate interregional travel), community-level planning (present solutions to meet diverse needs within a

particular region or city) , and site-level planning (focuses on the procurement and installation of EV chargers for a predetermined location).
However, charging network planning without considering a distribution can result in charging stations being concentrated in certain areas, leading to imbalance. For example, present **REF** with statistics.
Furthermore, still lack investigation of distribution charging network planning at a city scale considering with key factors. -> Due to i) model complexity ii) limitations of model structures to solve multi factors (e.g., environmental, economic, and urbanity factors). i) As the number of factors to consider increases or the scale expands (small district to city level), the complexity of the model grows, making it highly challenging to generalize the model (optimize the model). ii) v

1.1. Example Subsection

Subsection text.

1.1.1. Mathematics

This is an example for the symbol α tagged as inline mathematics.

$$f(x) = (x + a)(x + b) \tag{1}$$

$$f(x) = (x + a)(x + b)$$

$$\begin{aligned} f(x) &= (x + a)(x + b) && (2)\\ &= x^2 + (a + b)x + ab && (3) \end{aligned}$$

$$\begin{aligned} f(x) &= (x + a)(x + b) \\ &= x^2 + (a + b)x + ab && (4) \end{aligned}$$

$$\begin{aligned} f(x) &= (x + a)(x + b) \\ &= x^2 + (a + b)x + ab \end{aligned}$$

$$\begin{aligned} f(x) &= (x + a)(x + b) \\ &= x^2 + (a + b)x + ab \end{aligned}$$

1	2	3
4	5	6
7	8	9

Table 1: Table Caption

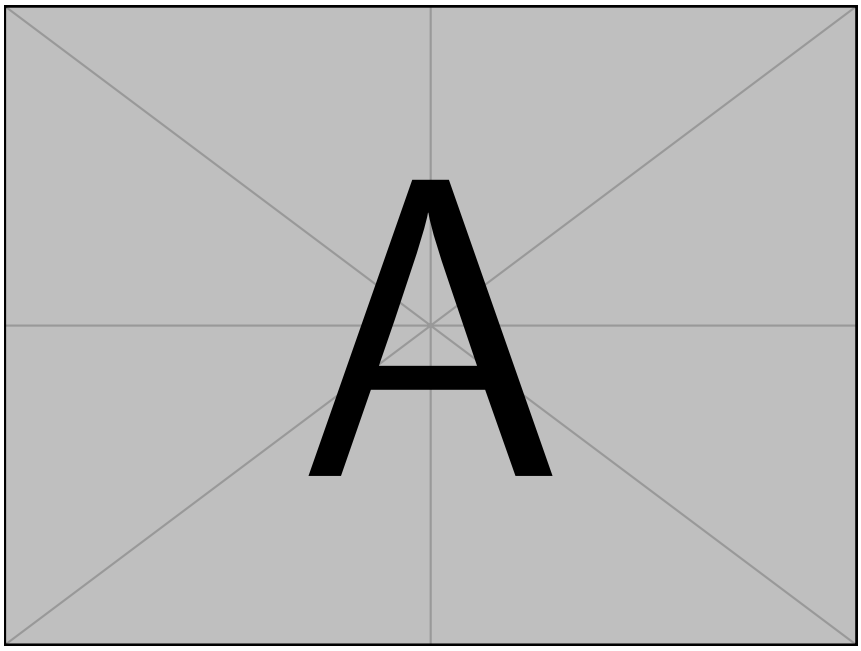

Figure 1: Figure Caption

Appendix A. Example Appendix Section

Appendix text.
Example citation, See Lamport [1].

References

[1] Leslie Lamport, *LaTeX: a document preparation system*, Addison Wesley, Massachusetts, 2nd edition, 1994.