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Application of Reinforcement Learning to Composite Beam Design

*Min-Jeong Cho[1] and Hyeon-Jong Hwang[2]

[1), 2)] *School of Architecture, Konkuk University, Seoul 120 Neungdong-ro, Korea*
[1)] *fjgh1998@konkuk.ac.kr*
[2)] *hwanghj@konkuk.ac.kr*

ABSTRACT

Recently, a lot of artificial intelligence studies have been conducted in the field of building structures and construction based on supervised learning. As the supervised learning requires a huge amount of learning data, training for the structural design is difficult due to the limited available data. For this reason, this study focused on the development of a design optimization algorithm by applying a reinforcement learning model that does not require learning data, addressing the difficulty in securing data and design materials required for learning and design diversity. The proposed method showed stably converged learning results.

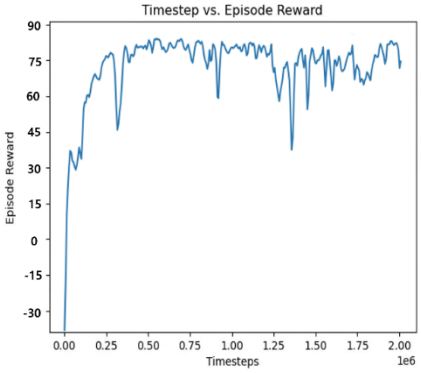

Fig. 1 Reinforcement learning result for composite beam section

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[1)] Master Student
[2)] Professor