

딥러닝 모델 (Memory cell-based RNN)을 이용한 지역/기후영향 포함한 Solar radiation 예측 모델

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For developing countries where solar radiation data is scarce due to high implementation costs of measurement stations. Modeling is an economical way for the estimation of solar radiation from typical climatic variables. In this study, different memory cell-based deep recurrent neural network (RNN) structures, i.e. long short-term memory (LSTM), and gated recurrent unit (GRU), are investigated for the prediction of solar radiation using a series of measured meteorological variables obtained from the Llorente meteorological station located in Guayaquil, Ecuador. The LSTM structure outperforms the other methods according to several metrics. Thus, the proposed model deemed as an efficient technique to capture sequential features and predict solar radiation for practical purposes. Acknowledgments: This work was supported by the National Research Foundation of Korea (NRF) grant funded by the Korea government(MSIT) (No. NRF-2017R1E1A1A03070713) and Korea Ministry of Environment(MOE) as Graduate School specialized in Climate Change.