

Towards Smart City Energy Analytics: Identification of Consumption Patterns Based on the Clustering of Daily Electric Consumption Curves

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Abstract This paper presents the application of clustering algorithms to daily energy consumption curves of buildings. Our aim is to identify a reduced set of consumption patterns for a tertiary building during one year. These patterns depend on the temperature throughout the year as well as the type of the day (working day, work-free day and school holidays). Two clustering approaches are used independently, namely the K-means algorithm and the Expectation-Maximization algorithm based on Gaussian Mixture Model (EM-GMM). The clustering results obtained with the two algorithms are analyzed and compared. This study represents the first step towards the development of a prediction model for energy consumption.

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