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Disaggregating and Forecasting the Total Energy Consumption of a Building: A Case Study of a High Cooling Demand Facility

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Abstract : Energy disaggregation has been focused by many energy companies since energy efficiency can be achieved when the breakdown of energy consumption is known. Companies have been investing in technologies to come up with software and/or hardware solutions that can provide this type of information to the consumer. On the other hand, not all people can afford to have these technologies. Therefore, in this paper, we present a methodology for breaking down the aggregate consumption and identifying the highdemanding end-uses profiles. These energy profiles will be used to build the forecast model for optimal control purpose. A facility with high cooling load is used as an illustrative case study to demonstrate the results of proposed methodology. We apply a high level energy disaggregation through a pattern recognition approach in order to extract the consumption profile of its rooftop packaged units (RTUs) and present a forecast model for the energy consumption.

Keywords : energy consumption forecasting, energy efficiency, load disaggregation, pattern recognition approach
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