

Unsupervised Nonintrusive Appliance Load Monitoring and Disaggregation Methods Based on Hidden Markov Model and Its Variation

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Abstract

Nonintrusive appliance load monitoring (NALM) is a novel method to disaggregate the aggregated power consumption data from smart meters into the individual appliance' consumption without the independent installation of hardware to each appliance, which has great potential in Advanced Metering Infrastructure (AMI) and improving the energy conservation of residents. The unsupervised NALM method is not depend on the standard load signature that built by prior collected from laboratory, which is different from the mostly existing supervised algorithm. This paper reviews the unsupervised NALM methods based on hidden markov model and its variation, and makes a comparison of both methods by disaggregation accuracy and the convenience of extension.