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Appliances energy prediction Data Set

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Abstract: Experimental data used to create regression models of appliances energy use in a low energy building.

Data Set Characteristics:	Multivariate, Time-Series	Number of Instances:	19735	Area:	Computer
Attribute Characteristics:	Real	Number of Attributes:	29	Date Donated	2017-02-15
Associated Tasks:	Regression	Missing Values?	N/A	Number of Web Hits:	124876

Source:

Luis Candanedo, luismiguel.candanedoibarra '@' umons.ac.be, University of Mons (UMONS).

Data Set Information:

The data set is at 10 min for about 4.5 months. The house temperature and humidity conditions were monitored with a ZigBee wireless sensor network. Each wireless node transmitted the temperature and humidity conditions around 3.3 min. Then, the wireless data was averaged for 10 minutes periods. The energy data was logged every 10 minutes with m-bus energy meters. Weather from the nearest airport weather station (Chievres Airport, Belgium) was downloaded from a public data set from Reliable Prognosis (rp5.ru), and merged together with the experimental data sets using the date and time column. Two random variables have been included in the data set for testing the regression models and to filter out non predictive attributes (parameters).

For more information about the house, data collection, R scripts and figures, please refer to the paper and to the following github repository:

[\[Web Link\]](#)

Attribute Information:

date time year-month-day hour:minute:second
 Appliances, energy use in Wh
 lights, energy use of light fixtures in the house in Wh
 T1, Temperature in kitchen area, in Celsius
 RH_1, Humidity in kitchen area, in %
 T2, Temperature in living room area, in Celsius
 RH_2, Humidity in living room area, in %
 T3, Temperature in laundry room area
 RH_3, Humidity in laundry room area, in %
 T4, Temperature in office room, in Celsius
 RH_4, Humidity in office room, in %
 T5, Temperature in bathroom, in Celsius
 RH_5, Humidity in bathroom, in %
 T6, Temperature outside the building (north side), in Celsius

RH_6, Humidity outside the building (north side), in %
T7, Temperature in ironing room , in Celsius
RH_7, Humidity in ironing room, in %
T8, Temperature in teenager room 2, in Celsius
RH_8, Humidity in teenager room 2, in %
T9, Temperature in parents room, in Celsius
RH_9, Humidity in parents room, in %
To, Temperature outside (from Chievres weather station), in Celsius
Pressure (from Chievres weather station), in mm Hg
RH_out, Humidity outside (from Chievres weather station), in %
Wind speed (from Chievres weather station), in m/s
Visibility (from Chievres weather station), in km
Tdewpoint (from Chievres weather station), Å°C
rv1, Random variable 1, nondimensional
rv2, Random variable 2, nondimensional

Where indicated, hourly data (then interpolated) from the nearest airport weather station (Chievres Airport, Belgium) was downloaded from a public data set from Reliable Prognosis, rp5.ru. Permission was obtained from Reliable Prognosis for the distribution of the 4.5 months of weather data.

Relevant Papers:

Luis M. Candanedo, Veronique Feldheim, Dominique Deramaix, Data driven prediction models of energy use of appliances in a low-energy house, Energy and Buildings, Volume 140, 1 April 2017, Pages 81-97, ISSN 0378-7788, [[Web Link](#)].

Citation Request:

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