

Abstract:

Talking about energy load mining will address two main points: energy consumption, and energy forecasting. Pre-processing the data of the energy consumption to detect missing values, and capture what type of the time series we have (trend, seasonal, cyclic or irregular), will help us to understand the observations on the data we have clearly. Once we accomplish these steps, we could build our forecasting models, but no guarantee on having an accurate result. Using exponential smoothing techniques important to smooth the data where it is an effective strategy that considers as the first part of many forecasting approaches. Having the chance of applying any smoothing technique on other software such as Excel, R or SAS, approved how important they are.

When it comes to modeling, there are three main categories for forecasting. Those are short-term, medium term, and long-term forecasting. Each one of those has its purposes and periods. There are different models and techniques that can be used such as neural networks, holt-winters and ARIMA with its different variations. Also when someone wants to do electricity load forecasting, a decision regarding the model should be made. In other words, should a univariate model be used or a multivariate model? This presentation focuses on univariate ARIMA and explains its different stages, identification, estimation and diagnostic checks, and forecasting. At the end, the presentation explains the way that we can use to evaluate our final model.