Exponential Smoothing

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Abstract: The main purpose of this work is to illustrate the exponential smoothing as a technique of filtering time series data and forecasting. We are going to study three types of exponential smoothing models, these are, Simple Exponential Smoothing (SES), Linear Exponential Smoothing (LES), and Holt-Winters method. Additionally, a comparison will be established between the three mentioned types and the ARIMA models as well as forecasting. Also, theoretical proofs of the equivalence will be given. Three software packages (Excel, SAS, and JMP) were used to analyze the data and to verify the equivalency between some Exponential Smoothing models the corresponding ARIMA models.