

## **Seasonal Gradient Smoothing Method for Forecasting**

*Vicki L. Sauter*

University of Missouri - St. Louis

U.S.A.

### **Abstract**

Exponential smoothing is a well-accepted forecasting technique which not only is easy to use, but also is competitively accurate when compared to more sophisticated methods. However, currently available procedures for exponential smoothing are not appropriate for all series: for some series forecasters are required to use more difficult and expensive techniques, such as ARIMA models, in order to obtain the necessary accuracy levels and business insights. This paper discusses an alternative structure for smoothing, referred to as the seasonal gradient smoothing method, which handles a family of series which are not well modeled using available exponential smoothing methods. For this family of series, the seasonal gradient smoothing method performs as well as appropriate ARIMA models and considerably better than alternative exponential smoothing models. More importantly, these models provide information about the phenomenon being forecasted that is more useful in making business decisions than do the alternative models.

*Keywords:* Exponential Smoothing, Time Series Analysis, Business Applications.