

## Scale Normalization for Frequency Effects in Forecast Performance Statistics

*Matthew Lorentson  
National Weather Service  
Green Bay, Wisconsin*

When assessing forecast performance using metrics, the use of POD and FAR is problematic whenever describing a period of performance that is broken into shorter time period "bins." This binning method of verification is used in several programs, including aviation GPRA. Using IFR GPRA verification as an example, statistical evidence in the national dataset indicates that a strong relationship exists between IFR forecast performance and the frequency with which IFR conditions occurs--i.e. when frequency increases, performance metrics improve; when frequency decreases, performance metrics decrease. Fortunately, there is meaningful evidence that indicates the influence of IFR frequency on national aviation forecast performance metric averages can be neutralized through scale normalization via regression."