Public Abstract

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Title:THE VERIFICATION OF WEATHER FORECASTS, NUMERICAL MODELING, CLIMATOLOGY, AND VARIATIONS IN ENSO CYCLES IN FORECAST ACCURACY

Weather forecasting has been a difficult problem for meteorologist for more than one hundred years. In the early days, our understanding of atmospheric processes was limited by our incomplete understanding of the governing principles and equations. The invention of the television and computers made numerical weather prediction possible by the mid-20th century. Shortly after this, television was used to broadcast the local news and weather forecasts. Understanding the atmosphere, however, was still incomplete and this made it difficult for meteorologists to make weather forecasts. In the present day, we have numerous models and advanced technologies to look at atmospheric data and analyze in order to produce the most accurate forecast possible. But how accurate are these forecasts? My research and this paper will focus on the accuracy of the human forecaster (from meteorologists at KOMU TV 8 in Columbia, Missouri) and how the forecast compares to predictions from numerical models and local climatology. Initial results suggest the human produced forecast outperformed not only climatology but also numerical models overall. However, when breaking down the data and analyzing it versus ENSO cycles, while this result was true for most seasons and ENSO phases, it was not always the case. With the analysis of the data, it is intended we will gain an understanding of systematic biases human forecasters or models possess for this region with respect to season and ENSO phase. If we understand these biases, it will improve our forecasting skills by accounting for them and increasing accuracy. This, in turn, will boost confidence in a human generated forecast