



## A Neural Network Solution to Predicting Wind Speed at Cape Canaveral's Atlas Launch

By Kenneth P. Cloys

Biblioscholar Okt 2012, 2012. Taschenbuch. Book Condition: Neu. 246x189x8 mm. This item is printed on demand - Print on Demand Neuware - This thesis demonstrates the potential for using time-delay neural networks to provide Launch Weather Officers (LWOs) at 45th Weather Squadron (45 WS) with advance warning of wintertime (November-March) peak wind speeds at the Atlas launch pad. The 45 WS provides weather support to the United States space program at Cape Canaveral Air Station, NASA's Kennedy Space Center, and Patrick Air Force Base. Due to the complex wintertime environment produced by the effects of friction and instability, 45 WS LWOs consider wintertime launch pad winds their toughest forecast challenge. Neural networks were developed, trained, and tested using observations of wintertime peak wind speed, wind direction, and directional deviation collected from March 1995 through March 1999 by 45th Space Wing's Weather Information Network Display System. Using current and past values of the observed elements, the networks produced 16 forecasts of peak wind speed. The first forecast was valid for 30 minutes past forecast start time, the second for 1 hour past start time, etc., up to 8 hours past start time, for any start time. Network performance was compared to...



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