



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Joao V.C. Teixeira	Project Number J0620
Project Title Does the Wind Change with Height?	
Abstract Objectives/Goals My objective is to answer the question: How does the wind speed change with height? My hypothesis was that the wind speed increases with height in a fairly similar way from one day to the other. Methods/Materials To answer this question, I measured the wind speed at 4 different heights (0.5, 1.0, 1.5 and 2.0 m) for 3 days. I used 2 different methods: method A uses an anemometer that I built and in method B I release a piece of paper many times at a certain height and then measure the time and the distance until it falls onto the ground (the speed is the distance divided by the time and the final result is an average). Results The results show that in general the wind speed increases with height from 0.5 m to 2 m above the ground. The intensity of the wind is very different from one day to the other. However, if for each day we divide the wind speed at the different heights by the wind speed at 2 m (the maximum value), we obtain a similar profile for the wind for each day. This means that the growth of the wind speed with height follows a similar pattern every day. Also, the two different methods give different results but show a similar qualitative behavior Conclusions/Discussion My conclusions are that: (1) the wind speed increases with height, (2) the wind speed changes with height in a similar way from day to day, and (3) the wind speed is very difficult to measure because it changes every second or less.	
Summary Statement My project is about measuring how the wind speed changes with height.	
Help Received Father helped printing; All family (mother ,father and younger brother) helped with the measurements.	