CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
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Project Number
J0610

Project Title
Tornado in a Box

Abstract

Objectives/Goals
I am comparing a simulated Tornado with a heat source from the bottom, to a naturul Tornado where the heat source comes from the top.

Methods/Materials
I tested different cake pans with the chamber simulator, to find that a regular cake plate helped make the best simulated tornado, I will tried to make it bigger if possible.

Results
I was able to simulate a contanined man made tornado in a simulator chambor. It raises almost 4ft. above the chamber opening,

Conclusions/Discussion
In conclusion I found that I could simulate a tornado that has a heat sorce from bottom.

How does the simulator actually compare to a tornado? The proportions in the model need to be correct in order to create a vortex. This is probably true of tornadic vortices also. Too little updraft, too much updraft, too little inflow (too narrow a slit), too much inflow at too low a speed (too wide a slit), and no vortex will form. You will get circulation, but no concentrated vortex at the center. This particular model is more of a model dust devil than a tornado. This is because the heat source is at the bottom. Real life tornadoes have their energy sources overhead, so you will need to introduce a small fan at the top to better model a tornado. If you use a fan, you begin to get beyond the scope of this design. But if you introduce a small, weak fan, make the box wider and taller.

Summary Statement
Comparing heat sorces from a natural tornado and a simulation

Help Received
my mother help type my report, and my father helped with the assmbly of the simulator