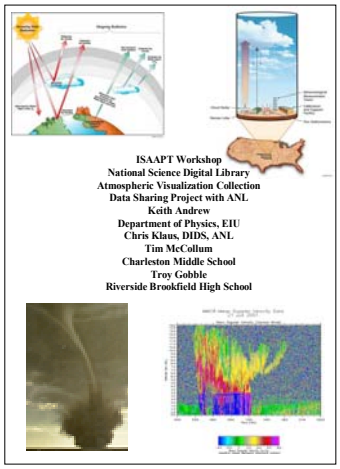
The NSDL AVC Data Sharing Workshops and Meetings

Worldwide ARM instrument locations

The National Science Digital Library Atmospheric Visualization Collection (NSDL AVC) has been sharing atmospheric data with a wide of students and faculty through special workshops and meetings. These activities have allowed new users access to the data and to experience data manipulation and investigation using the *Quicklooks* interface.

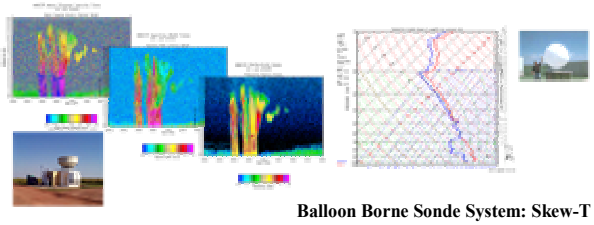
Keith Andrew, Chris Klaus, Tim McCollum, Troy Gobble



ISAAPT Workshop
National Science Digital Library
Atmospheric Visualization Collection
Data Sharing Project with ANL
Keith Andrew
Department of Physics, EIU
Chris Klaus, DIDS, ANL
Tim McCollum
Charleston Middle School
Troy Gobble
Riverside Brookfield High School

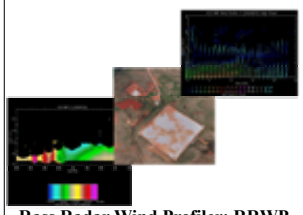
Workshop booklet front page for sharing data from AVC.

Quicklooks: Data Visualized for scientists and students.

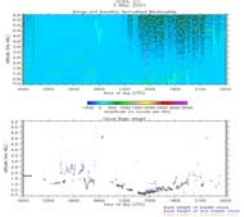


Balloon Borne Sonde System: Skew-T

Millimeter Cloud Radar: MMCR



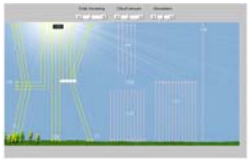
Rass Radar Wind Profiler: RRWP



Vaisala Ceilometer: VCEIL

NSA Site

A collection of educational java applets from unit conversion to basic models.



The intended use of this Wiki page is for collaborative development of lesson plans.
Stable revisions will be displayed on our collection's [lesson plan page]. Our current lesson plans include:

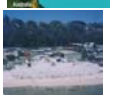
1. [An Introduction to Wind Chill]
2. [An Exercise in Air Pressure]
3. [Drawing Contour Plots]
4. [Severe Weather Indices]
5. [Investigating Clouds]
6. [Understanding Cloud Radar]
7. [Making a Cloud]
8. [A Cloud Base Model]
9. [A Snowflake Model]
10. [Distance of Lightning]
11. [A Simple Greenhouse Model]
12. [A Radiation Budget Model]
13. [Planet Emission Temperature Climate Model]

Effingham Girl-Scouts prepare to collect data as part of a camping expedition.

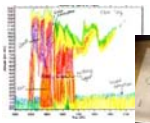
Elementary school students investigate atmospheric pressure.

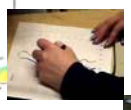
EIU senior Kristin Laribee investigates cloud properties in the lab (now at UofU).

TWP Sites



The nonlinear mathematical model allows students to investigate series solutions, approximate solution, stability, fractals and chaos.





AVC lesson plans tested in K-16 classes and national workshops.

The Mathematical Model

$$\frac{\partial \vec{v}}{\partial t} + (\vec{v} \bullet \vec{\nabla})\vec{v} + 2\vec{\omega} \times \vec{v} + \vec{\omega} \times \vec{\omega} \times \vec{r} = -\frac{1}{\rho}\vec{\nabla}P - g\frac{\vec{r}}{r} + \vec{f}$$

$$C_v \rho \frac{dT}{dt} + P\vec{\nabla} \bullet \vec{v} = \rho f'$$

$$\frac{d\rho}{dt} = -\rho\vec{\nabla} \bullet \vec{v}$$

$$F(\rho, P, T) = 0$$

$$Find\ (\vec{v}, \rho, P, T)\ at\ (x, y, z, t)$$

Web page to introduce Skew-T and weather indices