

An Atmospheric Visualization Collection for the NSDL

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ABSTRACT

In this poster, we describe visualization and educational efforts underway to build an Atmospheric Visualization Collection for the NSDL.

Categories and Subject Descriptors

I.4.0 [Image Processing and Computer Vision]: General – *image displays*.

J.2 [Physical Sciences and Engineering]: Earth and Atmospheric Sciences.

I.3.3 [Computers and Education]: Computer Uses in Education – *collaborative learning, computer-assisted instruction, distance learning*.

General Terms

Algorithms, Measurement, Experimentation, Human Factors.

Keywords

NSDL, digital library, ARM, atmospheric science, visualization, education.

1. INTRODUCTION

There are two essential components to our collection. The first is visualization of atmospheric data from the Atmospheric Radiation Measurement program's Southern Great Plains (SGP) site. The second is a growing educational community intent on using these images.

2. VISUALIZATION

Currently a visitor to www.nsd.arm.gov can see near real time images for most of the instruments at the SGP site. Efforts are now turning towards producing more quality images, such as contour plots, wind field plots, skewt plots, and animated plots. Examples will be displayed on our poster.

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Visualization routines producing these images are available for download. Efforts are underway to make an interactive software repository to encourage open source development efforts for this collection.

3. EDUCATION

The user community has started with an outreach program to middle school and high school physical science teachers. These teachers are initiating classroom and student based atmospheric projects that will use the wide range of visualization codes available through the ARM program. These instructors are establishing connections to students and other teachers first in the Illinois-Missouri-Indiana region and are preparing to expand to a national base of users. The teachers will author, contribute and evaluate material being developed for this growing community of users.

4. ACKNOWLEDGMENTS

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We appreciate our collaborations with the Atmospheric Radiation Measurement (ARM) program, which are making this collection possible.

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5. REFERENCES

- [1] Andrew, K., Klaus, C., Mace, G.G., McCollum, T., and Gobble, T. NSDL Community Development for Learners Utilizing ARM Data in Proceedings of the Eleventh ARM Science Team Meeting (Atlanta GA, March 2001).
- [2] Andrew, K., Bahrmann, C.P., Klaus, C., and Mace, G.G. NSDL Atmospheric Visualization Collection and the ARM Program in Proceedings of the Eleventh ARM Science Team Meeting (Atlanta GA, March 2001).
- [3] NSDL Atmospheric Visualization Collection's website. www.nsd.arm.gov.