

6A.2 TOUCH TABLE SUPPORTED CLIMATE SERVICES AND APPLICATIONS DEVELOPED AT NOAA's NATIONAL CLIMATIC DATA CENTER

Stephen. Del Greco*, Steve Ansari
NOAA National Climatic Data Center, Asheville, North Carolina

Mark Phillips
University of North Carolina Asheville, Asheville, North Carolina

ABSTRACT

Touch Table systems are windows compatible input and display devices used for visualization and analysis of scientific data. Displayed information on the Touch Table is controlled by simple hand gestures on the table surface. NOAA's National Climatic Data Center (NCDC) is utilizing Touch Table hardware and Touch Share software to present, share and analyze climate information. The Touch Share software allows interaction of multi-touch gestures with ArcGIS and Google Earth. Touch Table systems can also be networked which allow remote Touch Table users to connect and engage in discussions in real time. These include "themes" such as transportation, agriculture, energy, climate change, and disaster response. For example, during a disaster response scenario, high impact weather and climate data (hurricanes, tornadoes, drought, floods, etc.) and social data can be input to the Touch Table to provide tools to measure populations at risk. Touch Table systems will enhance NOAA's capability to respond to climate and weather phenomena.

1. DATA ARCHIVES

The NCDC is one of the premier archives of climate and weather data in the world. Over two petabytes of data reside in its archives. These data include remote sensing, model and in situ data and information. Much of these data are ingested in near real time and in formats that allow data to be integrated. As new technologies are realized the growth of NCDC's data holding are expected to grow several peta-bytes annually. Therefore, NCDC is in a unique position to support the themes mentioned above by importing into Touch Table systems integrated products and collaborate with scientists and decision makers. Towards the end, NCDC has partnered with the University of North Carolina Asheville Engagement Center to provide Touch Table Climate Services for the local community to access storm risk.

2. CLIMATE SERVICES

NCDC utilizes a geospatial database to manage climate/weather data. The center has also developed display software which is referred to as the *Climate and Weather toolkit* (available to users at URL <http://www.ncdc.noaa.gov/oa/wct/>) and allows for data visualization, integration and product export. Toolkit derived products are exported to various formats (KMZ, Shapefile) that can be imported directly into a Touch Table environment. NCDC's Climate Services support generating near real time products for input to Touch Table for responding to extreme events. The center is also producing gridded climatologies that illustrate the spatial distributions and frequencies of various events (flash flood, hail, tornadoes) that planners use to put extreme events in historical perspective.

For example, NCDC has the capability to respond to a hurricane threatening the eastern seaboard by producing integrated maps or animations of satellite, radar and surface data that can be uploaded to NCDC's networked Touch Table and made accessible on NOAA's National Hurricane Center touch-table. This allows for direct interaction with hand gestures on the Touch Table by either personnel residing at NCDC or the Hurricane Center and is interpreted by all. See figures 1, 2 and 3 of a satellite and radar composite imported to Touch Table. The images portray hurricane Katrina as a user zooms in and rotates the image using simple hand gestures.

* Corresponding author address: Stephen DelGreco,
NOAA National Climatic Data Center,
151 Patton Ave., Asheville, NC 28801;
e-mail: Stephen.a.delgreco@noaa.gov.

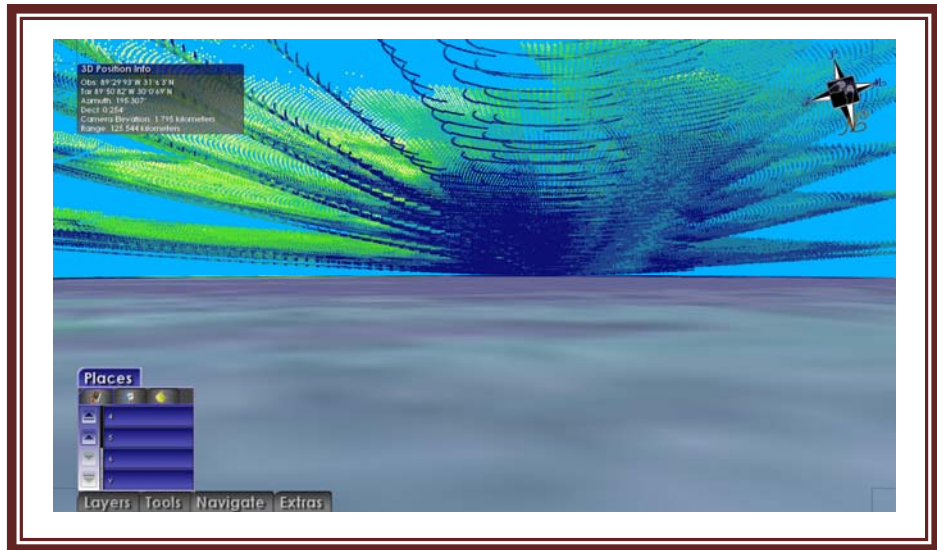


Figure 1.

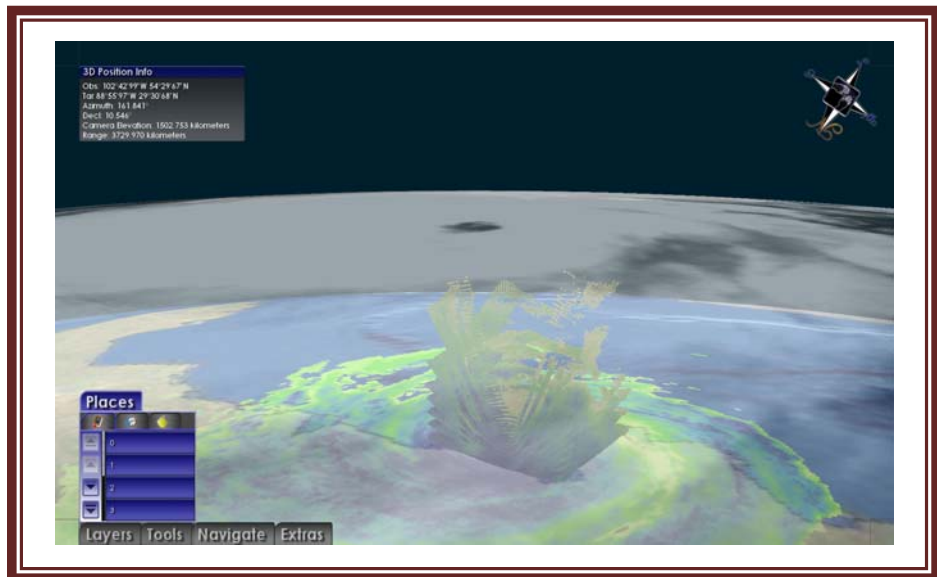


Figure 2.

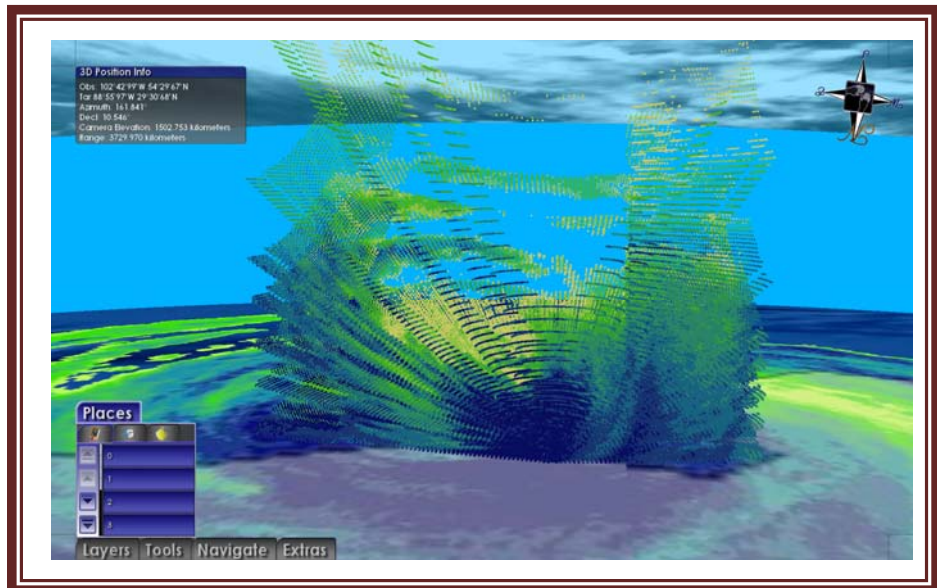


Figure 3.

3. REFERENCES

Ansari, S., M. Phillips., and S.A. Del Greco, 2007: A Geospatial Database and Climatology of Severe Weather Data. *88th AMS Annual Meeting, combined preprints CD-ROM, 20-24 January 2008, New Orleans, LA, 22nd Conference 39 IIPS [International Conference on Interactive Information and Processing Systems for Meteorology, Oceanography, and Hydrology]*, American Meteorological Society, Boston, Mass.

Ansari, S., and S.A. Del Greco, 2005: GIS Tools for visualization and analysis of NEXRAD Radar (WSR-88D) Archived Data at the National Climatic Data Center. *85th AMS Annual Meeting, combined preprints CDROM, 9-13 January 2005, San Diego CA, 21st Conference IIPS [International Conference on Interactive Information and Processing Systems for Meteorology, Oceanography, and Hydrology]*, American Meteorological Society, Boston, Mass., File J9.6, 9 pp. (January 2005).