Three Dimensional Display for Radar Data
Vaisala IRIS 3D View

dBZ
66
62
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15
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Reflectivity, dBZ
Fri 2009-03-06 01:54
511.5 x 489.7 x 14.5 km
TURKEY 40.0000° N, 30.0000° E, 970 m ASL
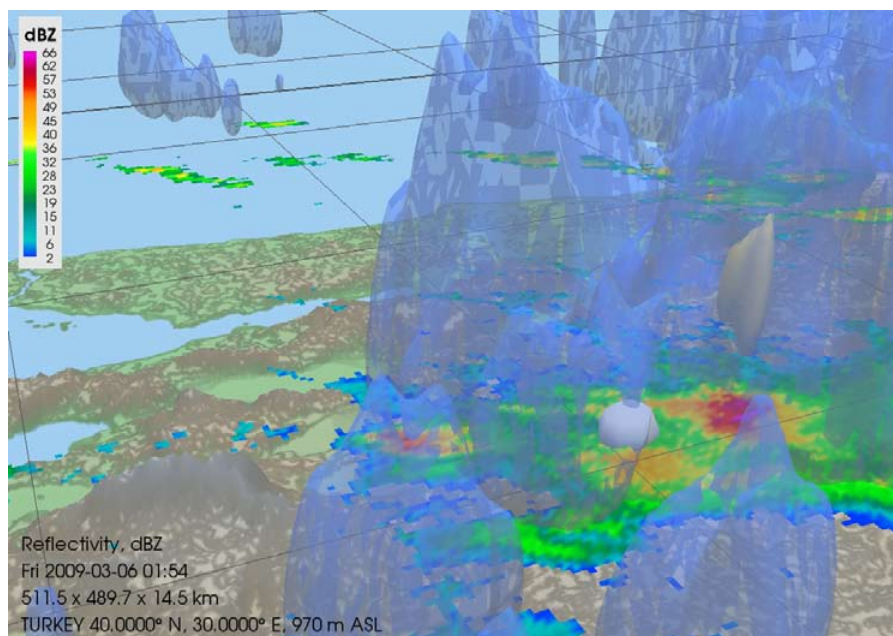
Features/Benefits

- Reflectivity, Velocity, Spectrum Width, or Rain rate in 3 dimensions

- Up to 4 iso-surfaces with adjustable opacity or volume rendering

- Pan, zoom, rotate, and animation

- Interrogate radar data products using cursor tools

- Display regional radar composites or single station radar sites

- 2D radar products as underlays

- Geographical terrain in 3 dimensions

- Use in Live mode or search data archives

Weather radars generally collect data using volume scan strategies which provide information on the angle, distance, and height from the radar site to a target. Vaisala's IRIS 3D View linux application is for viewing and interacting with this volumetric data in three dimensions. 3D View excels at creating 3D radar data for operational diagnostics, research and education, and public outreach/presentations.

Explore, probe, and dissect

The IRIS 3D View application presents radar volume information in three dimensions. The three dimensional information may be presented as iso-surfaces or volume rendered. An iso-surface display will show locations of a constant data values in 3D space. Users may define from 1 to 4 iso-surfaces with respective to color and opacity. Volume rendering is where each data value is assigned a color and displayed in 3D space. Both display styles support changing the viewing angle by panning, zooming, and rotation. Animation of up to 24 hours of data is also supported from a fixed viewing angle.

Digital elevation data may be used within IRIS 3D View to show the ground topography in 3D space. This functionality allows comparison of the relationships of radar data to terrain. This is a useful feature for studying weather patterns over complex terrain or finding points of beam blockage. IRIS 3D View also supports displaying a traditional 2D radar product as the base layer of the presentation. This allows users to compare information from the traditional 2D products to that seen in 3D. IRIS two-dimensional radar products, such as PPI, CAPPI, MAX, VIL, and SRI may be used as the 2D layer. A cursor tool which can be navigated in 3D space, presents the data value, terrain height, latitude/longitude position, plus range and bearing to radar site or point of interest.

In Live mode IRIS 3D View will continuously present the newest data in 3D space. When performing research the application provides an intuitive interface to search archive data via radar site, date, and time. Viewing angles and state may be saved to the user preferences for continuous use. For example, if there is a particular flight corridor a viewing angle may be saved in IRIS 3D View which looks through this corridor and presents the information continuously.
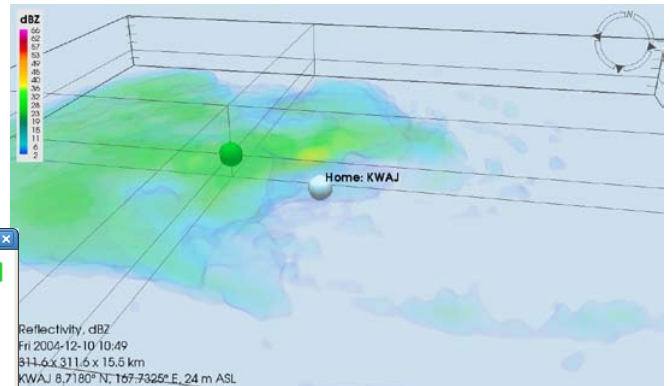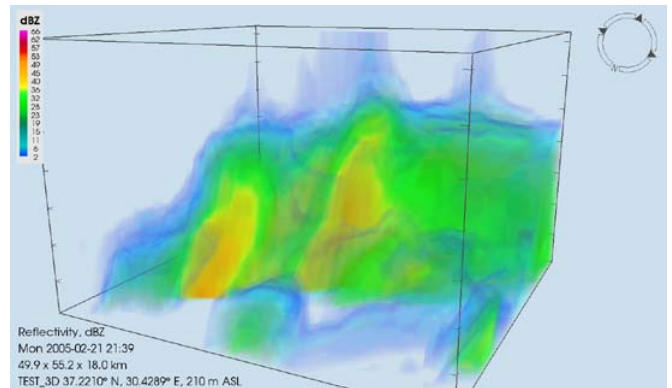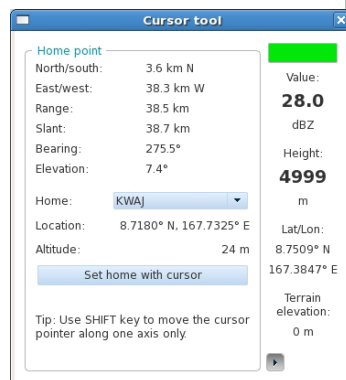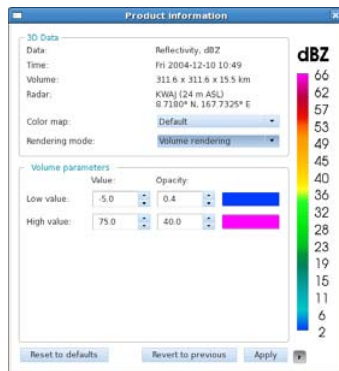
Comprehensive and User-Friendly

The IRIS 3D View interface was designed for both novice and expert users. Existing technology, such as Google Earth and Microsoft Visual Earth, were explored for various methods commonly used to control 3D environment. Throughout the design process usability

consultants were employed to evaluate the interface. Test subjects with varied backgrounds provided invaluable insight into their thought process while using draft versions. These efforts have lead to an intuitive and user-friendly experience within the complexity of working in 3D space.

Technical data

Recommended Computer Requirements

Intel Core 2 Duo Processor (3.0 GHz) or equivalent
2GB RAM or greater
nVidia GeForce 9600 graphics accelerator card or equivalent
Red Hat Enterprise Linux 5.0 or greater
Minimum display resolution of 1280x1024

Reflectivity, dBZ
Mon 2005-02-21 21:39
49.9 x 55.2 x 18.0 km
TEST_3D 37.2210° N, 30.4289° E, 210 m ASL

Reflectivity, dBZ
Fri 2004-12-10 10:49
311.6 x 311.6 x 15.5 km
KWAJ 8,7180° N, 167.7325° E, 24 m ASL