



AVS PRODUCT UPDATE

Technology overview of latest products

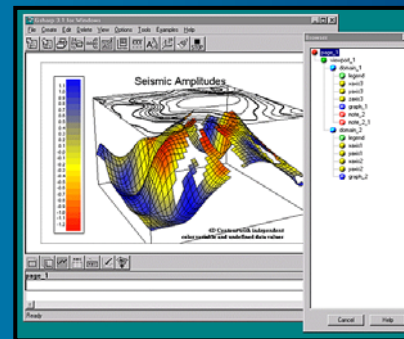
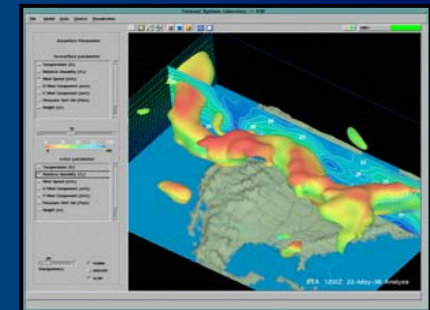
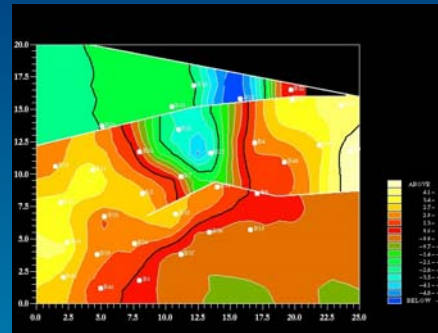
Jason Alldridge

Roger Fleuty



PRECIS

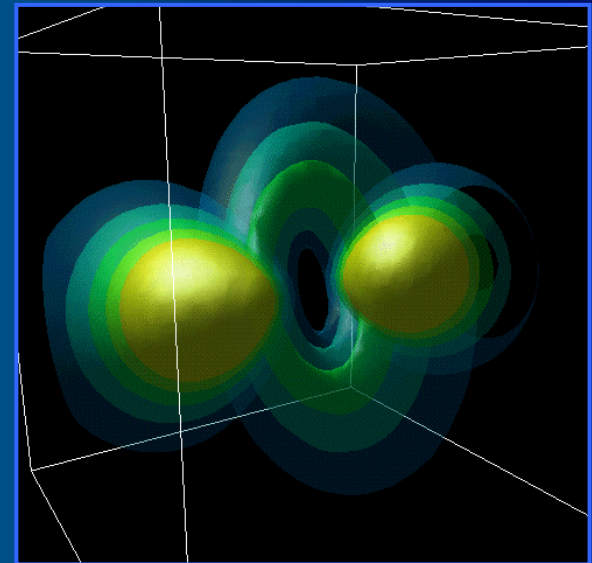
- AVS Express 6.0
- Toolmaster 7.2
- Gsharp 3.2
- OpenViz 2.1





EXPRESS 6.0

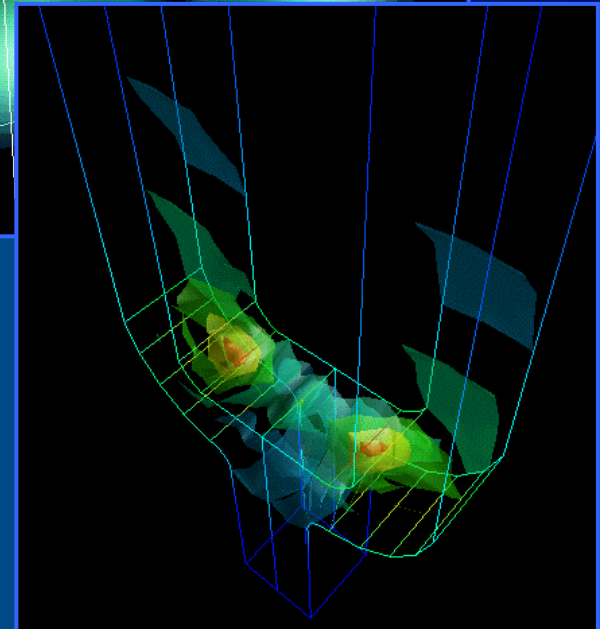
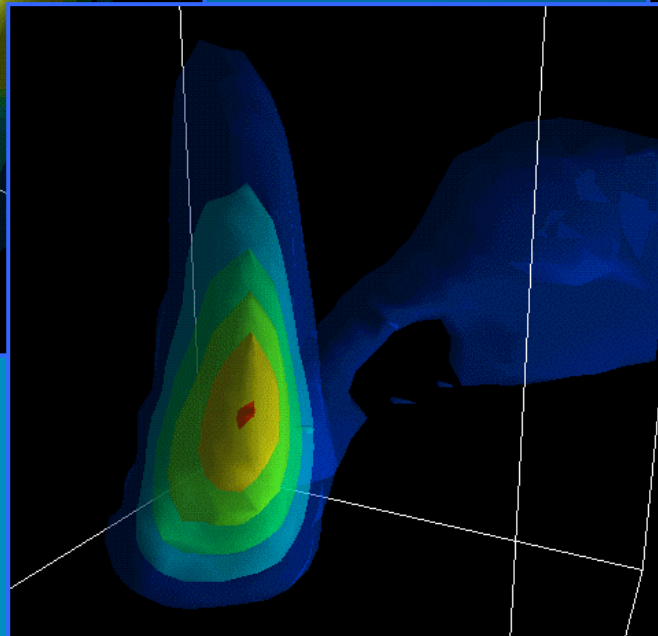
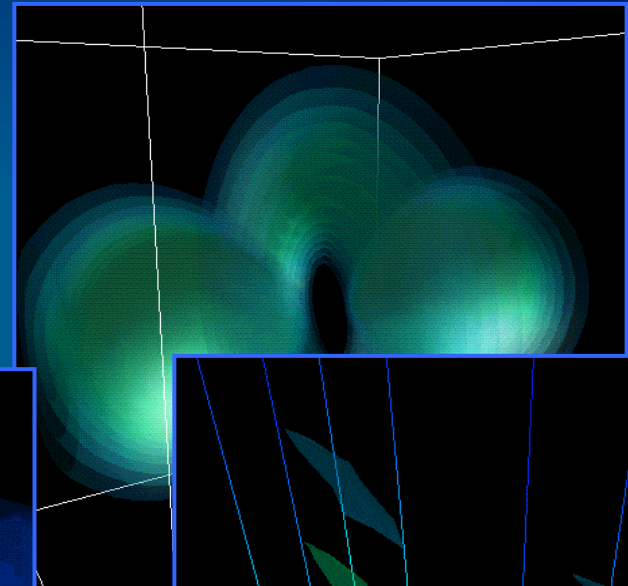
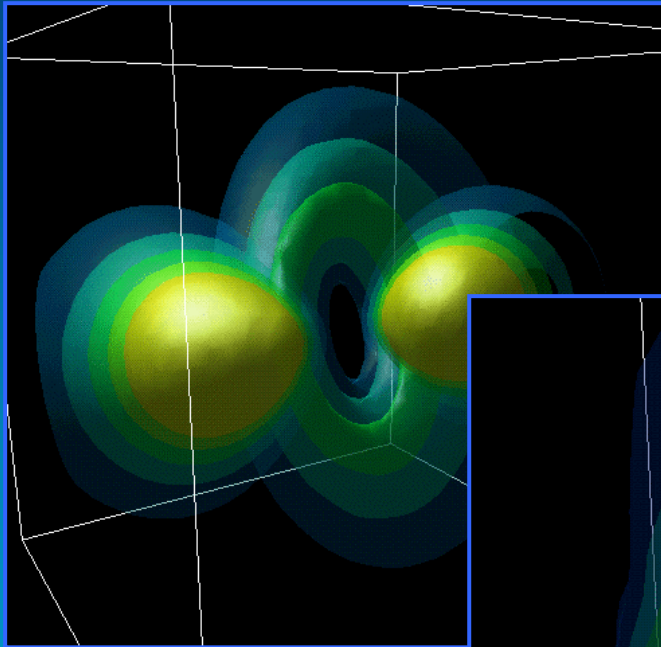
- Improved 'Viewer' Quality
 - **Specular props, Light Angle, Sky Background Shading, 2-Pass Transparency (new)**
- Viz techniques
 - **Volume Rendering improvements**
 - **Illuminated lines (new)**
- New data readers
 - **Generalized NetCDF, Plot3D, Image3DVol (image stacks), CGNS (new CFD Format)**
- Upgraded MPEG generator
- 64-bit array objects
- Enhanced Colour Map editor





2 PASS TRANSPARENCY

- Eliminates many artifacts
- Better Depth Perception





■ Usability

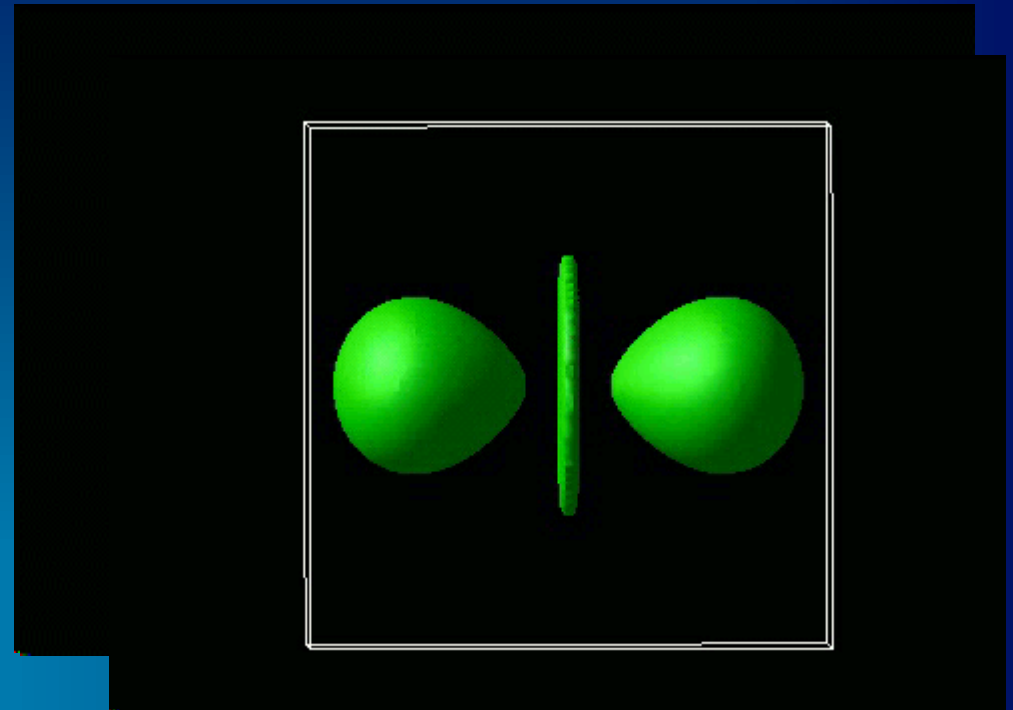
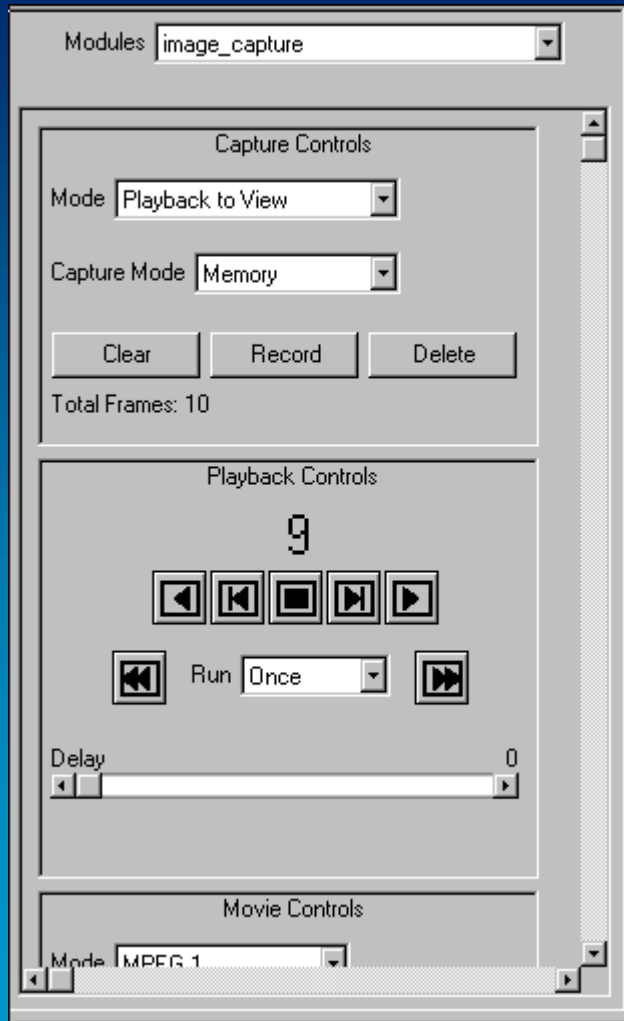
- Simplified “Auto loading” of modules
 - (such as IAC modules)
- On-line “Reference pages” update (PDF/Html)
- **MANUALS Updated**

■ Misc

- “Background mode” operation
 - (batch, no windows needed)



NEW MPG



- **Much Higher MPEG Quality**
- **Based on the bbMPEG source code vs 1.24 beta 16**



GENERALIZED NETCDF FILE IMPORT

- Tested on 20 - 30 Environmental - Climate Research Files, all platforms
- Latest netCDF Library Version
- Open structure, layout
- User interface Selects Which Variables to Read
- Symmetric Read/Write modules

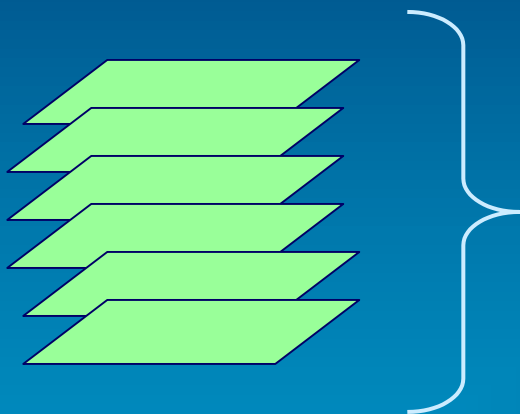


NetCDF

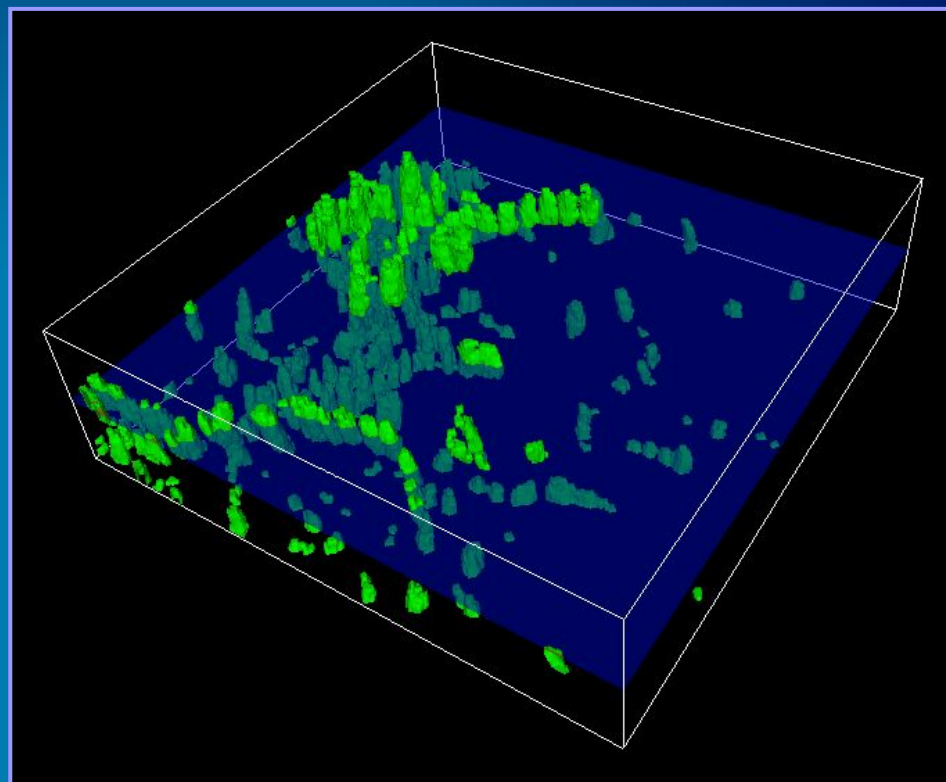


READ-IMAGE3DVOL (AKA BUILD3D AT IAC)

- Reads Sequence of Image Stacks (any image format)
- Assembles 3D Volume Field



TIFF, JPEG, GIF, ...





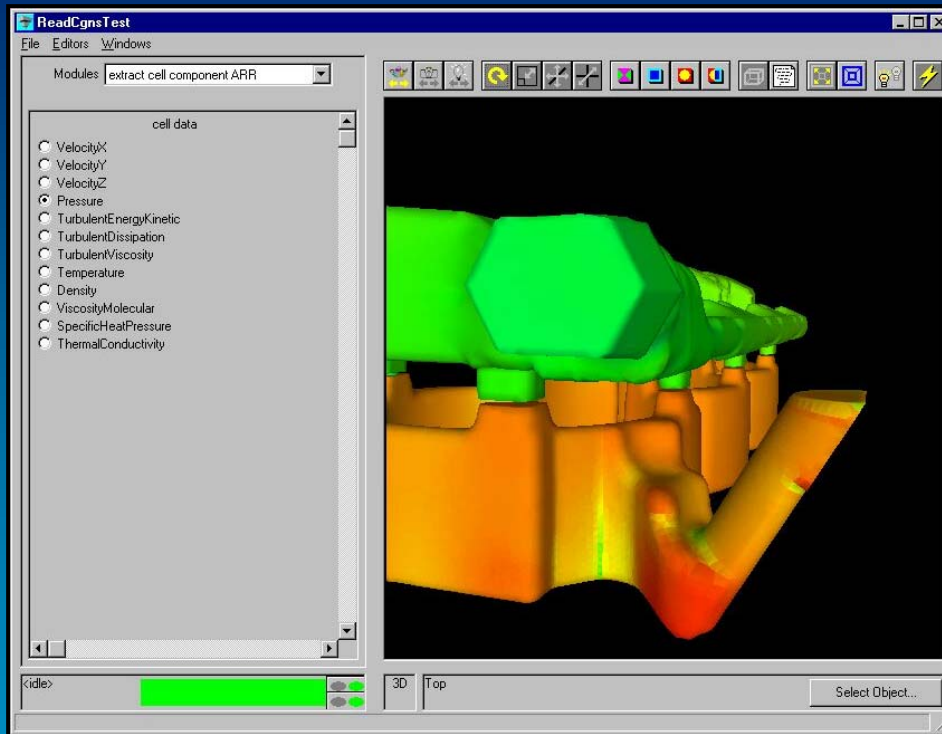
CGNS READER MODULE



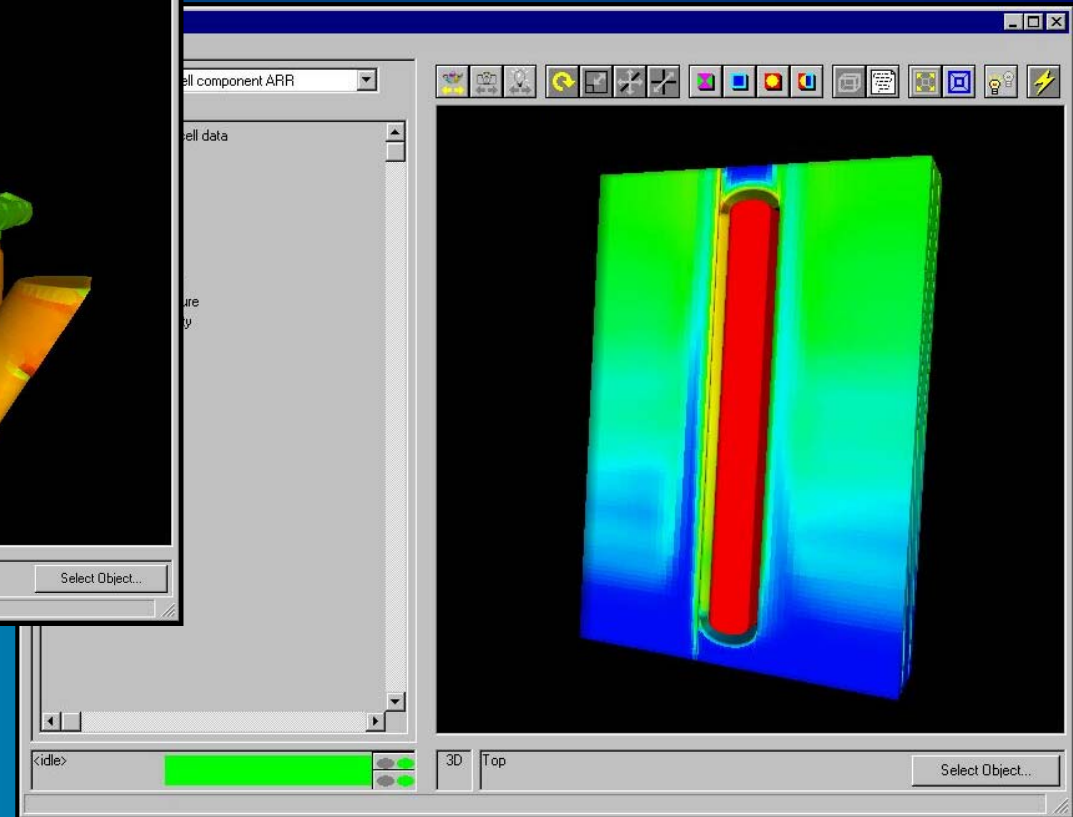
- CGNS: CFD General Notation System
- Consortium: <http://www.cgns.org>
- Structured, Unstructured, Multiblock Meshes
 - **Boeing, NASA, US Airforce, DLR, Numeca, ICEM-CFD, FLUENT, Computational Dynamics STAR-CD, ...**
- Efficient Binary Format, large data, - all platforms



CGNS READER MODULE EXAMPLE - STAR-CD VALIDATED



STAR-CD 500K element Engine Block
(35 Mbyte binary file)

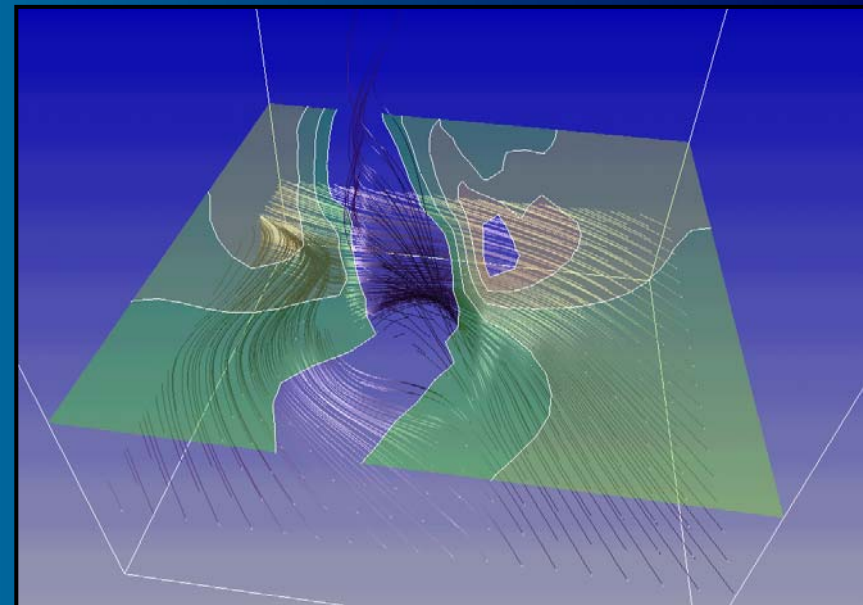


STAR-CD 100K element Car Radiator
(10 Mbyte binary file, loads in ~10sec)



NEW VIS TECHNIQUE: “ILLUMINATED LINES”

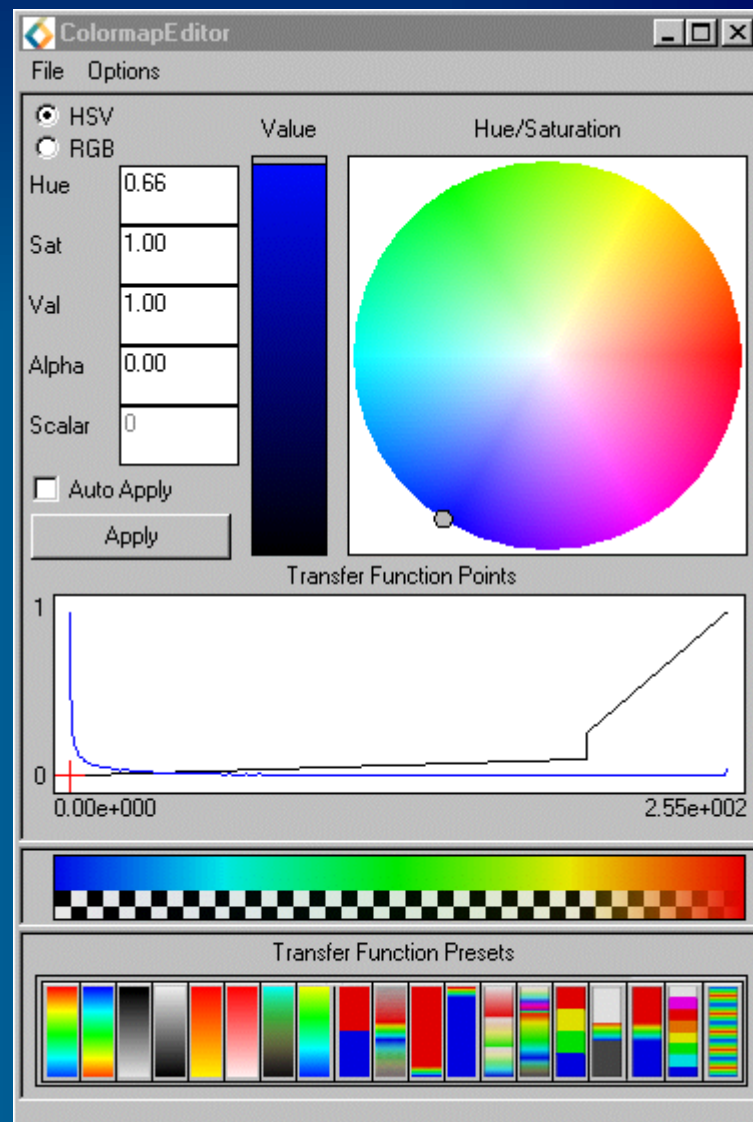
- **High Visual Quality** for Field Streamlines
- Allows many more streamlines in one view
- Uses Texture Mapping Hardware - OpenGL
- **Advanced Shading Model**
 - **Full Phong**
 - **Line Transparency**
 - **Alpha Blended**
 - **Anti-aliasing**





COLOUR MAP EDITOR

- Colour Map presets
- Colour bar area to preview the effect of the Alpha channel
- Automatic extraction of available histogram data (previously had to use separate module)





TOOLMASTER 7.2

- Shipped July 2001
- Product enhancements
 - **Support for Linux**
 - **HTML-based documentation**
 - **New mesh options**
 - **Truetype fonts (PC)**
 - **Upgrade to Motif 2.1**
 - **Improved International language support**
 - **Improved support for porting Unix apps to Windows**
- Bug fixes for customer-reported defects
- Product upgrade to current operating systems



- **Product enhancements**
 - **Support for Linux**
 - **Double precision floating point support**
 - **Support for internationalization**
 - **Upgrade to HTML-based help**
 - **Upgrade to Motif 2.1**
 - **GsharpPC enhancements**
 - **Web-edition enhancements**
 - **New GSL functions (redim, webedition, importexcel...**
- **Bug fixes for customer-reported defects**
- **Product upgrade to current operating systems**



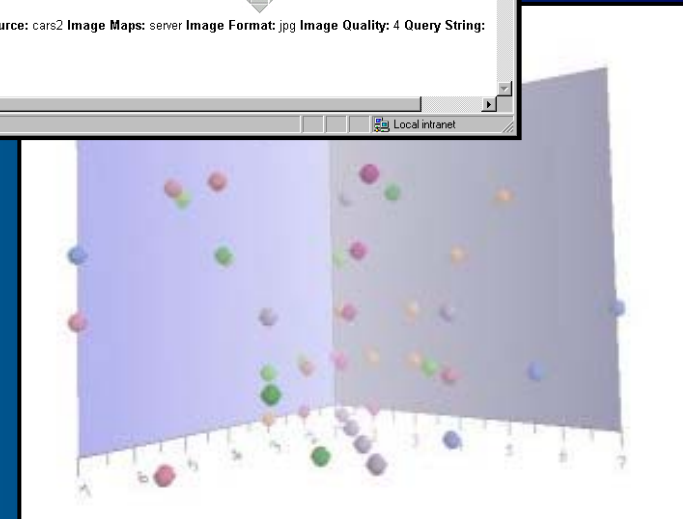
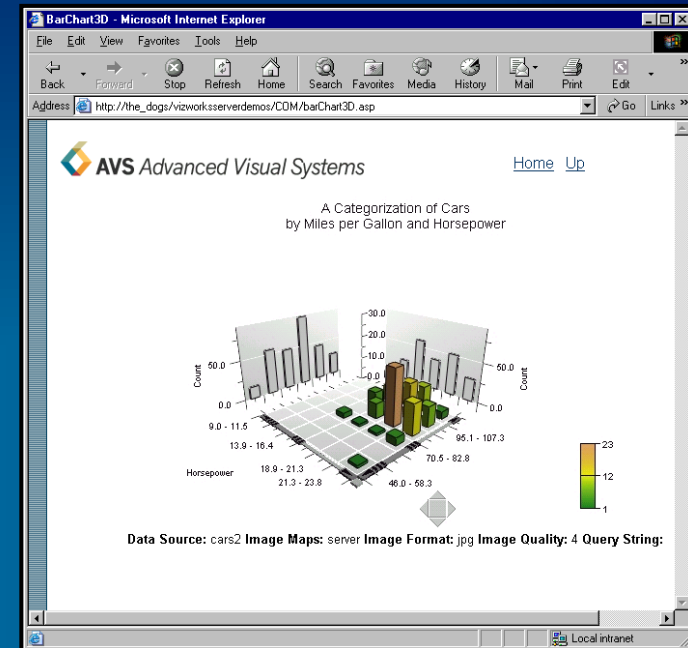
GSHARP 3.2 – PC ENHANCEMENTS

- **New functionality**
 - **Truetype fonts**
 - **Excel data reader**
 - **Shade editor**
 - **Greater windows integration: WMF, copy & paste**
 - **Multi-page capability**
- **Major updates**
 - **Data manager (resizable, added UNIX functionality)**
 - **Hierarchy browser**
 - **Script builder (resizable, added UNIX functionality)**
 - **Resource editors**



OPENVIZ 2.1

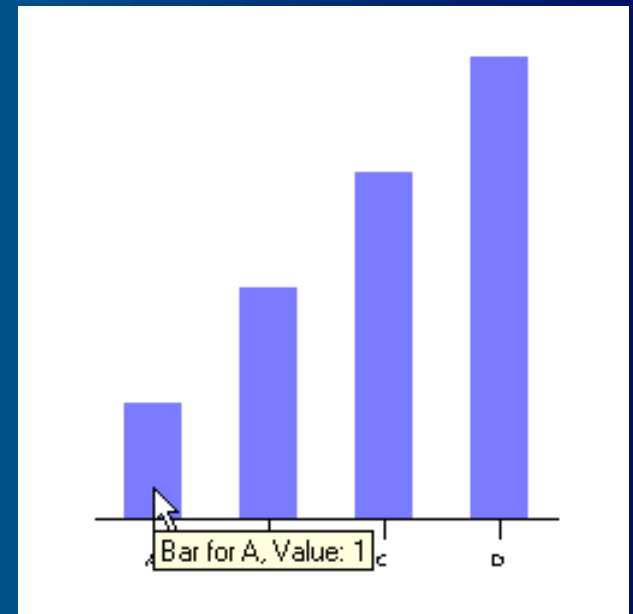
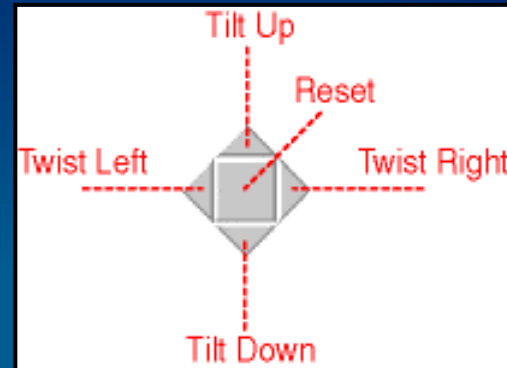
- **New Server-side Capabilities**
- **New statistical charting techniques**
 - Whisker chart
- **New visual quality features**
 - Fogging in 3d scenes
- **Additional charting features**





SERVER SIDE COMPONENTS

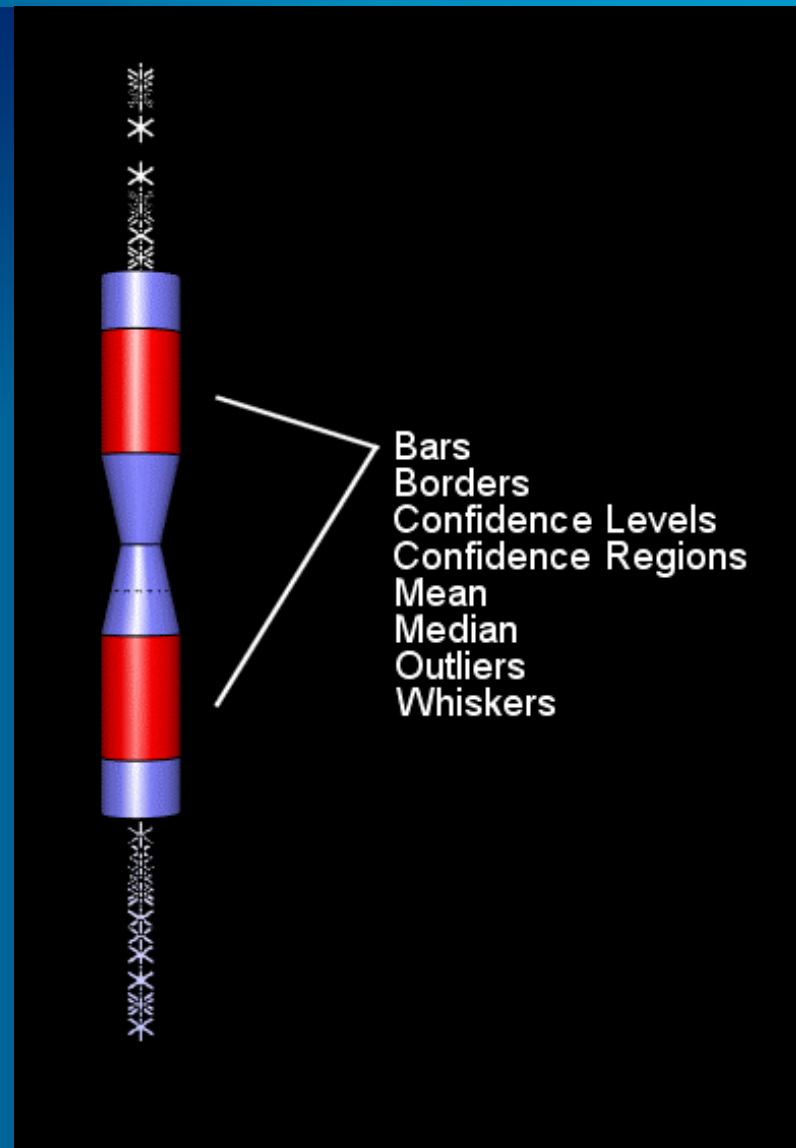
- Raster map renderer (generation of image maps)
- Userinput mapper – simulate mouse clicks in the scene (generally used in conjunction with 'ismap' functionality)
- Tilt manipulator – used to simulate suede rotation on the client machine





ADDITIONAL NEW COMPONENTS

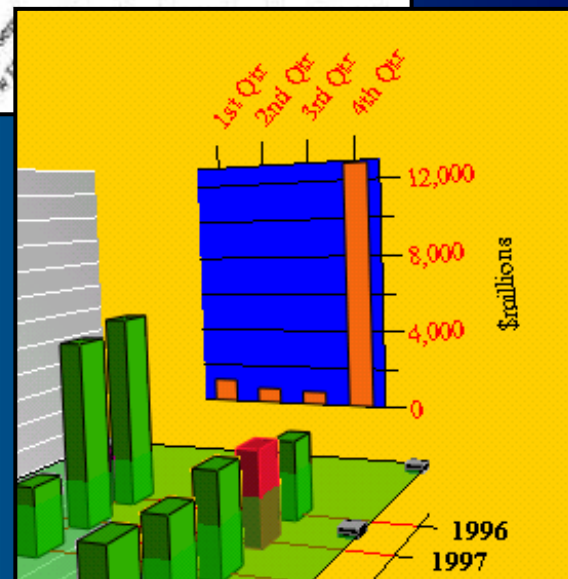
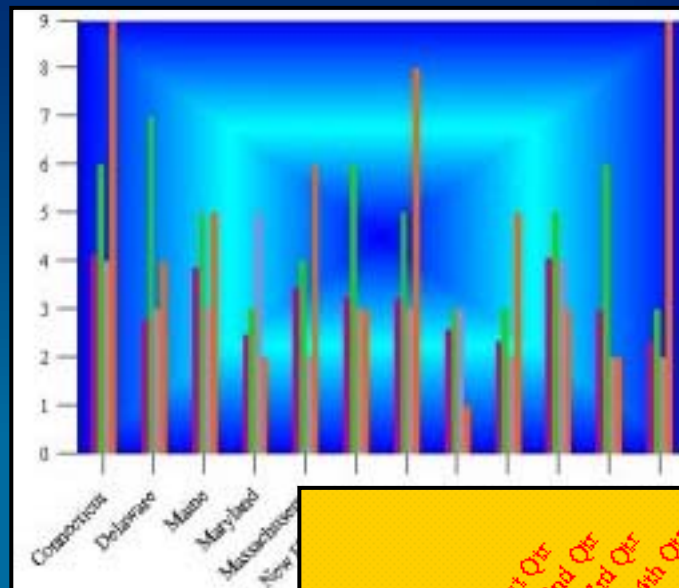
- Bin statistics. Includes:
 - **first,last, standardDeviation, percentile, confidence, meanPlusNStdDev, medianPlusNStdDev**
- Whisker chart (used in conjunction with Extract outliner)
 - **Shows the distribution of data within a data set**
- Button manipulator





ADDITIONAL NEW COMPONENTS

- Background
- Image output (via Jimi or VzWriteImage)
 - **JPEG/PNG**
- Wall
- Datamap info
- Image to field
- Combine fields





ENHANCED CONTOUR CHART

- Angled labels
 - Shows orientation of the isocurve labels with respect to the direction of increasing or decreasing isocurve value.
- Frame labeling
- Tick Marks
 - draw ticks at the local extremum values indicating whether the isocurve where the ticks are drawn is a local maximum or a minimum.
- Grid

