

# OMNI3D™

## Graphical Post-Processing

Interpret complex CFD simulation results rapidly!

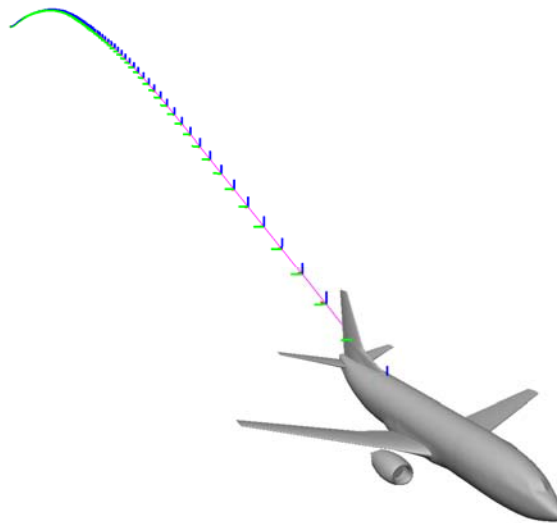
OMNI3D is a specialized tool for post-processing of AMI CFD software output, comparison with experiment and general 3D and 2D visualization. Its intuitive easy-to-learn interface provides useful information immediately, from viewing the entire model in 3D to probing the individual panels and points on the body, wakes, streamlines, off-body velocity scans, and contour lines.

OMNI3D is also a powerful 2D plotting tool for displaying parameters at arbitrary cuts through the geometry, selected panels and streamlines, as well as calculating loads for an arbitrary group of panels versus solution or time, comparison with experiment, and general line data. Individual data points and lines can be probed with the mouse.



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Propeller Wake Development



B737 Stall  
Maneuver  
Trajectory



Sailboat Response to Waves

OMNI3D is an interactive 3D data visualization tool designed for efficient post-processing of computational fluid dynamic simulation results.

### **CFD Data Input:**

- Accepts data in the VSAERO plot file format, a fully general CFD output format supported by several commercial CFD codes
- Reads both formatted (ASCII) and unformatted (binary) data files from Linux, UNIX and Windows/XP workstations.

### **3D Displays:**

- Displays body and wake geometry using high quality shading or wireframe
- Uses sophisticated color mapping to show computed fluid flow and measured experimental data on the geometry
- Displays wakes as wireframe, streamlines, cross-sections, or transparent surface
- Uses color to show wake strength along wake lines
- Displays contours of surface pressure, flow velocity, mach number, or any other property on the body or off-body velocity scans
- Provides real-time 3D view manipulation for interactive data investigation
- Animates time dependent results with changing surface geometry and several different reference frames
- Plot frame trajectories as axis system, connected points, or lightshaded ribbon
- Displays on-body and off-body streamlines, using color to show streamline and boundary layer properties
- Compare multiple geometries from different files or solutions, in 2D or 3D, with or without experimental data
- Offers mouse-based probing of geometry, streamlines, off-body velocity scans

### **2D Displays:**

- Any solution parameter on arbitrary 2D cuts
- Solution parameters vs. time
- Streamlines and boundary layer parameters
- Planar cuts relative to specific reference frame
- Frame loads in a particular axis system
- Mouse-based zooming, probing, and cut plane manipulation
- General line plotting
- Spanwise loads
- Load summary for any selected group of panels
- Load summary vs. time or solution parameters

### **Comparison with Experimental Data:**

- Accepts experimental data from a separate input file
- Displays experimental data defined at specific locations on the geometry in 3D
- Displays experimental data on 2D cuts
- Provides specially designed visual tools for comparing experimental data with CFD results

OMNI3D combines a point-and-click X/Motif GUI with OpenGL high performance 3D graphics. It is available on Linux and most brands of UNIX workstations.

### **Questions?**

For more information about OMNI3D, please contact:

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